

IRIDACEAE.

NEW GENERA AND SPECIES AND MISCELLANEOUS NOTES.

By G. J. LEWIS.

I. THE NEW GENUS ENGYSIPHON.

ENGYSIPHON Lewis gen. nov.

Acidanthera Baker Berl. Monat. XIX, 15. 1876 (partly) *not* Hochst.; Kew Bull. 1906, p. 27; Journ. Linn. Soc. XVI (1877) 160; Handbk. Irid. 186 (1892); Fl. Cap. VI. 130 (1896). *Sphaerospora* Klatt in Linnaea XXXII. 725 (1863) partly, *not* of Sweet.

Cormus parvus, globosus, basin versus oblique complanatus, fibris tunicarum rigidis, lignosis, lucidis, conjunctis. Folium radicale unicum (in *E. roseoalbo* 2 vel 3), lineare, basi amplexicaule, marginibus nervoque medio incrassatis, ciliatis, plus minusve viscosis: folia caulina 1-2, breviora semivaginantia. Bractea herbacea, viridis, rare apice scariosa: bracteolae membranaceae breviores. Perianthii tubus longus cylindricus; segmenta regularia, exteriora longiora. Stamina in apice tubi inserta, unilateralia vel plus minusve arcuata, c. tubo exserta; anthera sagittata, dorsifixa, quam filamentum multo breviora. Ramuli styli brevissimi, recurvati. Capsula cylindrica, submembranacea. Semina orbiculata vel subcompressa.

Corm small, not exceeding 1.5 cm. in diam., spherical, more or less obliquely flattened towards the base: tunics of compact, shiny fibres, completely fused together, more or less woody. Stem nearly always simple, flexuous. Leaves usually 1 basal (in *E. roseoalbus* 2 or 3), narrow-linear to linear, erect or falcate, margins and mid-rib raised, frequently viscid and ciliate, other veins usually inconspicuous: cauline 1 or 2, short, half sheathing. Bract entirely herbaceous, green (except in section *Brevitubi* in which it is membranous at apex, obtuse, not very long), 2 cm. or more long, linear, acute. Bracteoles membranous, shorter than and enclosed in bract. Perianth-tube cylindrical, equal in diameter throughout its length, long and slender except in § *Brevitubi*: perianth-segments symmetrically arranged, outer longer than inner. Stamens inserted at throat of perianth-tube, all arranged to one side and more or less arcuate or occasionally symmetrically arranged: filament much longer than

anther; anther sagittate, dorsifixed, versatile. Style overtopping or shorter than stamens, branches very short, recurved, densely ciliate along upper margin. Ovary glabrous, cylindrical, membranous. Seeds small, light brown, rounded or somewhat angled by pressure.

I. *Section Longitubi*. Bract firm, green and herbaceous throughout; perianth-tube long and slender, 2 cm. (occasionally 1.5 cm.) to 7 cm. long.

II. *Section Brevitubi*. Bract membranous at apex, soft in texture, perianth-tube 1 cm. or less long, included in bract, perianth-segments much longer than tube.

The name is from the Greek *enguos* = narrow and *siphon* = tube and refers to the long and narrow perianth-tube found in all the species except *E. brevitubus* and *E. roseoalbus* in which it is short.

Engysiphon is very closely related to *Geissorrhiza* from which it differs in the following points:—

- (1) The stamens and style are usually arranged to one side and are arcuate, occasionally symmetrically arranged (in *Geissorrhiza* the stamens and style are always symmetrically arranged).
- (2) The filament is long and much exceeds the anther in length, whereas in *Geissorrhiza* the filament is not very long and about equals the anther in length.
- (3) Except in § *Brevitubi* the bract is firm and herbaceous throughout whereas in *Geissorrhiza* it is membranous towards the apex.
- (4) The flower is much longer, the perianth-segments comparatively longer and narrower and, except in § *Brevitubi*, the perianth-tube long and slender.

The section *Brevitubi* forms a connecting-link between *Engysiphon* and *Geissorrhiza* and further study may show that some or all of the species should be placed in the latter genus. For the present, however, I consider that the species are most naturally regarded as constituting a separate genus.

As far as I can tell from the material collected and examined up to the present, the genus *Engysiphon* does not occur outside the Western Cape Province, and within that area it appears to be confined to the coastal belt. The species flower in the spring and early summer and apparently always grow in sandy soil, either on sandy flats or sandy mountain slopes.

KEY TO SPECIES.

I. § *Longitubi*.

Leaves very narrow, more or less terete in appearance.

Perianth-segments acute, narrow-linear; plant very slender. *roseus* (1)

Perianth-segments obtuse, linear, the outer sometimes shortly acute.

Perianth-tube long and slender, less than 4 cm. long. *pictus* (2)

Perianth-tube very long and slender, 5 cm. or more long. *longitubus* (3)

Leaves linear, flat.

Perianth-tube very long and slender, 5 cm. or more long, segments much shorter. *longitubus* (3)

Perianth-tube 2—4 cm. long; segments equal to or exceeding perianth-tube, occasionally a little shorter.

Perianth-segments exceeding tube in length, broad, obtuse, more or less oblong. *Schinzii* (4)

Perianth-segments about equal to, or slightly shorter than tube, never longer.

Flower comparatively small (usually under 5 cm. including perianth-tube and segments), 3—9 in inflorescence, basal leaf usually overtopping inflorescence. *longifolius* (5)

Flower large, 5 cm. or more in length, 1—4 in inflorescence, basal leaf sometimes reaching top of inflorescence, very seldom exceeding it. *exscapus* (6)

II. § *Brevitubi*.

Basal leaf (1 only) with margins and mid-rib raised, viscid and minutely ciliate; bracteoles much shorter than bract. *brevitubus* (7)

Basal leaves (2 or 3) glabrous, margins and mid-rib very little raised, bracteoles nearly as long as bract. *roseocalbus* (8)

(1) *E. roseus* (Schinz) Lewis comb. nov.

Acidanthera rosea Schinz in Bull. Herb. Boiss. 11. 222 (1894); Baker, Fl. Cap. VI. (1896). *Acidanthera sabulosa* Schlechter in Engl. Bot. Jahrb., XXVII (1900) p. 101.

Cape Peninsula—Chapmans Bay, Lewis, S.A.M. 53713! Muizenberg, Pappe, S.A.M. 21121! Diep River Flats, Marloth 7154 (N.H.)! Table Mountain, above Oranjezicht, Marloth 10714 (N.H.)! Cape Flats, Wynberg, Kensit, B.H. 13419 (B.H.)! Camp Ground, Dod 3419 (B.H.)! Claremont Flats, Guthrie 1347 (B.H.)! Cape Div.—between Melkbosch Road and Mamre, L. Bolus, B.H. 19976!

(2) *E. pictus* (Foster) Lewis comb. nov.

Acidanthera picta Foster in Contrb. Gray Herb. CXIV, 44 (1936). *Acidanthera tubulosa* (Houtt.) Baker in Journ. Linn. Soc. XVI, 160 (1877); Handbk. Irid. 186 (1892) as to name but not as to plant described; *A. tubulosa* (Houtt.) N.E. Br. in Kew Bull. (1929) 137. *Ixia tubulosa* Burm. f. Fl. Cap. Prodr. 1 (1768) in part; Houtt. in Handl. XII, 36, t. 78, f. 2 (1780).

There is a tracing of the Houttyn type figure in the Bolus Herbarium which, although incomplete, shows the perianth-tube to be the same length as the bract, the perianth-segments regular and equal, a little shorter than the tube. The species from the Cape Peninsula, which has broader and longer perianth-segments than the above species seems to agree very well with this figure. The perianth-tube is variable in length, sometimes as long as the bract, sometimes exserted and longer.

Cape Peninsula—Constantiaberg, Adamson, S.A.M. 52939! Klaver Valley, Lewis, S.A.M. 54128! Salter 7825 (S.A.M.)! Compton 5268

(B.H.)! near Cirkels Vlei, Salter 2846 (B.H.)! Muizenberg Plateau, Kensit, B.H. 22564 (B.H.)! near Simonstown, Bolus, B.H. 4691! Dod. 2036 (B.H.)! Riversdale, Bolus, B.H. 22561!

(3) **E. longitubus** Lewis sp. nov.

Cormus ignotus. Caulis 22—60 cm. alta, simplex, rigida, flexuosa. Folium radicale subteres, marginibus et nervo medio bene incrassatis, minute ciliatis, paulo viscosis, quam inflorescentiam breviora, circa 21—25 cm. longum (raro ad 57 cm.), 2—6 mm. latum; folia caulina 6—12 cm. longa. Bractea glabra, nervis obscuris, 6 cm. longa; bracteolae brevissimae. Tubus perianthii gracillimus e bractea exsertus 5.5—7 cm. longus, segmenta tubo breviora obtuse vel acutiuscula, circa 3 cm. longa, 5 mm. lata. Stamina segmentis aequilonga, filamentis 2.2 cm. longis, antheris 8 mm. longis, stylo paulo breviora.

Clanwilliam Div.—Warm Baths, Leipoldt, B.H. 20840 (type, in B.H.)! Nardouw Pass, Lewis, B.H. 22255 (B.H.)! Oliphants River, Eck. and Zey. (N.H. without no.)! Piquetberg Div.—top of Versfeld's Pass, Pillans 7148 (B.H.)! Piquetberg, Marloth 6580 (N.H.)! near Eendekuil, Howes 194 (N.H.)! Malmesbury Div., near Hopefield, Salter 3905 (B.H.)! Without locality, Eck. and Zey. N.H. 9995!

Corm not seen. Plant 22—60 cm. high, stem simple, firm, flexuose. Basal leaf subterete to linear, margins and mid-rib well raised, minutely ciliate, more or less viscid, not overtopping inflorescence, about 21—25 cm. long (up to 57 cm.), 2—6 mm. broad; cauline leaves acuminate, 6—12 cm. long. Inflorescence secund, fairly lax, 3—6-flowered. Bract glabrous, veins inconspicuous, usually 6 cm. long; bracteoles much shorter. Perianth-tube exserted from bract, very slender, 5.5—7 cm. long; segments shorter than tube, linear, obtuse or occasionally shortly acute, about 3 cm. long, 5 mm. broad. Stamens reaching top of perianth-segments, filament 2.2 cm. long, anther 8 mm. long. Style just overtopping anthers.

(4) **E. Schinzii** (Baker) Lewis comb. nov.

Acidanthera Schinzii Baker in Kew Bull. 1906, 27.

Type from Caledon Div., Houw Hoek, Penther 587 (*ex parte*). Specimens which agree fairly well with the description (type not seen) are the following:—

Caledon Div.—Shaws Mtn., Barker 9 (B.H.)! Bolus, B.H. 22562 (B.H. and in N.H. without no.)! Gillett 46 (B.H.)! Bot River, Mathews, N.B.G. 1515/30 (B.H.)! Caledon, Marloth 7010 (N.H.)!

The perianth-segments in this species are the broadest in the section *Longitubi* and slightly exceed the perianth-tube in length. The leaves

are very viscid and all specimens seen show them with particles of sand adhering along the ridges.

(5) **E. longifolius** Lewis sp. nov.

Cormus ad. 1.4 cm. diam., tunicis apice setosis. Caulis 13—37 cm. alta, simplex, flexuosa, gracilis. Vagina basalia 1, acuta. Folium radicale inflorescentiam fere superans marginibus et nervo medio bene incrassatis, viscosis, circa 32 cm. longum, 4 mm. latum; folia caulina 2, 3—7 cm. longa. Bractea nervis prominentibus fere hispidula. Perianthii tubus bractea aequilongus vel longior; segmenta obtusa vel acutiusecula. Stamina filamentis 1—1.3 cm. longis, antheris 5 mm. longis. Stylus antheris aequilongus.

Clanwilliam Div.—Nieuwoudt Pass, Leighton, B.H. 22558 (type, in B.H.)! Algeria, Lewis, B.H. 22270! Langevallei, Compton 5418 (B.H.)! Oliphants River, Schlechter 5030 (B.H.)! Citrusdal, Stanford, B.H. 22555! Clanwilliam, Leipoldt, B.H. 22556! North of Citrusdal, Taylor 1036 (B.H.)! Witsenberg and Skurfdeberg, Zeyher 1607a (N.H.)! Mostertersberg, MacOwan, S.A.M. 21110!

Corm up to 1.4 cm. diam.; tunics of very hard fibres, ending in sharp bristles at apex. Plant 13—37 cm. high, stem simple, flexuose, slender. Basal sheath 1, colourless, acute, 4—8 cm. long. Leaf 1 basal, linear, nearly always overtopping inflorescence, erect or spreading, margins and mid-rib well raised, viscid, minutely ciliate along inside edges, about 32 cm. long, 4 mm. broad; cauline 2, acuminate, 3—7 cm. long. Inflorescence 3—9-flowered, secund, compact. Bract firm, distinctly veined, usually sparsely and coarsely hispidulous, 2.8—1.8 cm. long; bracteoles up to 1.2 cm. long. Perianth-tube reaching top of bract or exerted, usually 2 cm. long (up to 2.5 cm.); segments obtuse or shortly acute, 2—2.5 cm. long, 4—8 mm. broad. Stamens reaching two-thirds way up segments, filament 1—1.3 cm. long, anther 5 mm. long. Style reaching top of anthers, branches slightly overtopping anthers.

(6) **E. exscapus** (Thunb.) Lewis comb. nov.

According to Foster in Contrb. Gray Herb. CXIV, 44 (1936), the synonymy should be as follows:—*Acidanthera exscapus* (Thunb.) Baker in Berl. Monat. XIX, 15 (1876). *Gladiolus exscapus* Thunb. Prodr. 184 (1800) and in Naturhist. Selsk. Kopenh. (1810) 3, t. I; Ker, Gen. Irid. 146 (1827). *Acidanthera tubulosa* (Houtt.) Baker in Journ. Linn. Soc. XVI, 160 (1877); Handbk. Irid. 186 (1892); Fl. Cap. VI, 132 (1896) as to plant described. *Sphaerospora exscapus* Klatt in Linnaea XXXII, 725 (1863).

Paarl Div.—Bains Kloof, Carter B.H. 22560! Schlechter 9162 (N.H.)!

Thorne, S.A.M. 46473! Salter 5112 (B.H.)! French Hoek Mtns. Marloth 7011 (N.H.)! near summit of French Hoek Pass, Galpin 12284 (N.H.)! Salter 4180 (B.H.)! Caledon Div.—Zwartberg, Pappe, S.A.M. 21108! Zeyher, S.A.M. 21111! B.H. 22557! Worcester Div.—Worcester, Cooper 1678 (B.H.)! Ceres Div.—Ceres, Leslie, N.B.G. 2602 27 (B.H.)! Tulbagh Div.—near Tulbagh Waterfall, Bolus, B.H. 5253!

(7) **E. brevitubus** Lewis sp. nov.

Cormus ignotus. Caulis 17—43 cm. alta, simplex vel ramosa. Folium radicale inflorescentiam aequilongum vel superans, marginibus et nervo medio incrassatis, minute ciliatis, viscosis; folia caulina 1 vel 2, acuminata. Inflorescentia secunda, laxa, 2—3-flora. Bractea tener, apice membranacea, obtusa, bracteolis membranaceis, multo brevioribus. Tubus perianthii in bractea inclusus, circa 1.1 cm. longus; segmenta obtusa. Stamina unilateralia, arcuata, filamentis circa 2 cm. longis, antheris 6 mm. longis. Stylus antheris aequilongus.

Piquetberg Div.—top of Piquetberg Mt., Bolus, B.H. 13651 (type, in B.H. and N.H.)! Piquetberg, Guthrie 2705 (B.H.)!

Corm not seen, remains of tunics hard, woody, light brown. Plant 17—43 cm. high; stem simple or branched, flexuose. Leaf 1 basal, linear, as long as or overtopping inflorescence, margins and mid-rib raised, minutely ciliate and viscid; cauline 1 or 2, acuminate. Inflorescence lax, secund, 2—3-flowered. Bract soft, membranous at apex, obtuse, 1.5—2 cm. long. Bracteoles membranous, much shorter. Perianth-tube included in bract, about 1.1 cm. long; segments all obtuse, outer 3.3 cm. long, 1 cm. broad, inner 2.9 cm. long, 1.1 cm. broad. Stamens arranged to one side, arcuate; filament about 2 cm. long, anther 6 mm. Style reaching top of stamens, branches well recurved at apex. Ovary 5—6 mm. long, 2.5 mm. diam.

(8) **E. roseoalbus** (Lewis) Lewis comb. nov.

Acidanthera roseoalba Lewis in S.A. Gard. Vol. XXIII (1933), 225.

George Div.—Doorn River, Fourcade 4744 (type, in B.H.)! Geelhoutbosch, Taylor 1628 (B.H.)!

This species differs from the above and all the other species in having 2 or 3 basal leaves which are glabrous, the margins and mid-rib only very slightly raised. The bract is entirely herbaceous or membranous at the apex, obtuse or shortly acute, soft in texture and drying more or less membranous, 2 cm. or less long. Bracteoles a little shorter. The flower is typical of this genus, the stamens, which have filaments much exceeding the anthers in length, are arranged well to one side and arcuate. The perianth-tube is included in the bract and does not exceed 1 cm. in length.

II. REVISION OF SPECIES PLACED UNDER ACIDANTHERA BY BAKER IN FL. CAP. VI. AND PUBLISHED SINCE THEN.

An examination of the material available has disclosed the fact that the genus *Acidanthera*, according to Baker, includes representatives of 5 genera, namely: *Babiana*, *Gladiolus*, *Hesperantha*, *Tritonia* and *Engysiphon*.

The genus *Acidanthera* Hochst. Flora 1844. 25 was based upon *A. bicolor* from Abyssinia and, according to the description and a figure seen by myself at Kew in 1934, is extremely closely related to *Gladiolus* (I consider that it is a *Gladiolus*), differing only in having a longer perianth-tube, which is more or less equal in diameter throughout its length, and perianth-segments which are very nearly equal.

Elongation of the perianth-tube occurs in many of the South African *Iridaceae* and I do not consider that this character alone is a sufficient one upon which to found a new genus. Among the *Iridaceae* studied by myself this elongation is found in *Babiana*, *Tritonia*, *Ixia*, *Lapeyrousia* and even *Romulea*, a genus which normally has a very short, funnel-shaped perianth-tube. (A new species of *Romulea* with a long, cylindrical perianth-tube is described in this paper.) Although this elongation of the perianth-tube makes the flower appear quite distinct from other members of the genus, the floral characters and vegetative characters, which I consider of the greatest importance in classifying the genera in *Iridaceae*, namely, the corm, leaves and bracts, do not, in the genera mentioned above, differ in any important detail from those typical of the various genera to which they belong.

I do not propose to deal with *Acidanthera bicolor* Hochst., the type of the genus, or any of the Tropical African species in this paper as I have not a sufficient knowledge of the North and Tropical African *Iridaceae*, but I must point out how the South African genus *Engysiphon* differs from *Acidanthera* (Hochst.) and why I consider that the other South African species placed under *Acidanthera* by Baker and other botanists do not belong there, but belong to the various genera mentioned above.

According to the description and the figure seen, *Acidanthera bicolor* has a corm about 2.5 cm. diam. surrounded by tunics of matted fibres reticulated upwards, and 2 basal leaves which are erect, linear, fairly firm, the veins inconspicuous. The lowest 1 or 2 cauline leaves resemble the basal leaves. The three lower perianth-segments are marked with a dark purple spot at the base, which means that the 3 upper and 3 lower perianth-segments are distinct.

In *Engysiphon*, apart from the differences in the corm and leaves (see description of the genus), the perianth-segments are regularly arranged,

patent, all equal, or more often the three outer slightly longer than the 3 inner, nearly always obtuse and concolorous, or, if marked, with corresponding marks on both outer and inner segments (e.g. *E. roseocalbus*).

The following species included in *Acidanthera* are in the sequence given in Fl. Cap. VI. 130 (1896):—

(1) *Acidanthera brachystachys* Baker. This is **Babiana brachystachys** (Baker) Lewis in Fl. Pl. S. Afr. Vol. XIV, 546.

(2) *A. graminifolia* Baker. (Type in British Museum.) I have not seen the type, but from the description this is almost certainly a *Gladiolus*, probably related to *G. undulatus* and *G. Milleri*. I propose changing the name to **Gladiolus graminifolius** (Baker) Lewis.

(3) *A. platypetala* Baker partly = *Gladiolus longicollis* Baker in Journ. Bot. 1876, 182. *A. platypetala* Baker Handbk. Irid. 186 (1892), Fl. Cap. VI, 131. *A. longicollis* (Baker) Foster in Contrb. Gray Herb. CXIV, 42 (1936).

This species belongs to the section of *Gladiolus* comprising *G. grandis*, *G. tristis*, *G. maculatus* and a few others. It differs only in having a slightly longer and more slender perianth-tube. The corm, leaves, bract, stamens, stigma, ovary and winged seeds are identical with those of the species mentioned above. It is most closely related to *G. maculatus*, and in some specimens the perianth-tube exceeds that of *G. maculatus* by 1 cm. only.

The type number, Baur 505, from Baziya Mt. is in the Bolus Herbarium. The perianth-segments are almost equal, acuminate, the perianth-tube about half as long again as the bract, curved; stamens just exserted from the mouth of the perianth-tube or sometimes the base of the anther included. The flowers are yellow, mottled with brown, usually 3, sometimes 1 or 2 only, arranged in a lax spike.

This is an Eastern Province species extending northwards to Natal, where it merges into the next species, *Gladiolus praelongitubus* Lewis sp. nov. As is very often the case, it is difficult to find an exact dividing line between the two species, the typical forms of which are quite distinct. In the Natal specimens of *G. longicollis* the perianth-tube is longer, up to twice the length of the bract, and the segments acute instead of acuminate, agreeing with Baker's description of *Acidanthera platypetala*, a Natal species. There seems little doubt, however, that the Natal plants are merely a form of *Gladiolus longicollis*, plants with the comparatively short and very long perianth-tube being found in the same locality.

Eastern Province.—Baziya Mt., Baur 505 (co-type in B.H.)! Katberg,

Gaikas Kop, Young, N.H. 15026! Komgha, Flanagan 1095 (S.A.M.) Griqualand East, Zuurborg, Tyson 1874 (S.A.M.)! near Kokstad, Tyson 1536 (S.A.M.)! Somerset East, Boschberg, MacOwan, S.A.M. 21331! *Orange Free State*.—Ficksburg, Galpin 13839 (N.H. and B.H.)! Vrede, O'Meara, N.B.G. 2045 33 (B.H.)! *Basutoland*.—Leribe, Dieterlen 232 (S.A.M.)! *Natal*.—Durban, Wood 108 (S.A.M.)! Howick, Karkloof, Symons, S.A.M. 11370! Mooi River, Mogg 3107 (N.H.)! Mogg 3244 (N.H.)! Polela, near Underberg, Dyer 3239 and 3247 (N.H.)! Estcourt, West 411 (N.H.)! *Transvaal*.—Vereeniging, Leendertz 5667 (B.H.)!

***Gladiolus praelongitubus* Lewis sp. nov.**

Acidanthera transvaalensis N.E.Brown, MS. *A. platypetala* Baker in Fl. Cap. VI, 131 (1896) partly.

Cormus depresso-globosus, circa 2·5 cm. diam., tunicis e fibris crassis superne reticulatis, infra parallelis, compositis. Vaginae basales 2, obtusae. Planta 35—75 cm. alta (saepius circa 60 cm.), caule simplice, gracile, fere omnino foliis circumfusus. Folium basale 1, vagina tubulosa laminam subaequilonga inflorescentia brevius, acuminatum, anguste lineare, nervo medio marginibusque crassis; folia caulina 2 similia laminae perbrevibus. Bractea obtusa vel acuta, linearis; bracteolae similes. Tubus perianthii gracillimus, cylindricus, apice vero tantum parum ampliatus, curvatus, bracteam bene superans, circa 11 cm. longus, apice 5—6 mm. diam.: segmenta exteriora similia, acuminata, 3 interiora similia, acuta, breviora. Stamina prope apicem tubi adnata, filamentis circa 8 mm. longis, antheris sagittatis, in tubo perianthii pro parte inclusis, ad 1·5 cm. longis. Styli ramuli stamina superantes, apicibus ampliatis, conduplicatis. Semina alata.

Transvaal.—Barberton District.—Barberton, mountain sides, Galpin 530 (type, in S.A.M., B.H. and N.H.)! Schaque Mt., Liebenberg 2837 (N.H.)! Berlin, Godwan River, Hofmeyr 76 (N.H.)! Kaapsche Hoop, Phillips 3459 (N.H.)! Pole Evans 958 (N.H.)! Barberton, Holt 338 (N.H.)! Ermelo District.—Nooitgedacht, Henrici 1270 (N.H.)! Convent Pupils 156 (N.H.)! Lake Chrissie, Hamilton, N.H. 4293! The Glen, Walker 130 (N.H.)! *Carolina District*.—Galpin 12373 and 12527 (N.H.)! *Graskop District*.—Galpin 14571 (N.H.)! *Lydenburg District*.—Gray, N.H. 4481! Sekukuniland, Barnard 437 (N.H.)! *Belfast District*.—Dullstroom, Galpin 13177 (N.H. and B.H.)! *Waterberg District*.—near Potgietersrust, Galpin 9158 (N.H.)! *Pilgrims Rest District*.—MacMac Kloof, Smuts and Gillett 2252 (N.H.)! Mauchsberg, Sabie, Smuts and Gillett 2302 (M.H.)! Sabie River, Mudd (without no., in B.H.)! *Krugersdorp District*.—Witpoortje Kloof, Murray 684 (N.H.)! Moss 13509 (N.H.)! Nelsberg, Taylor 1989 (N.H.)! *Zoutpansberg District*.—

Sebasa, West of Pepiti, Smuts and Gillett 3280 (N.H.)! Drakensberg, Devils Kantoor, Bolus, B.H. 7617! 9784!

Swaziland—near Mbabane, Bolus, B.H. 12339! Hlatikulu, Stewart 58 (S.A.M.)!

Natal.—St. Lucia Bay, Pole Evans 3659 (N.H.)! Clairmont, Wood 10489 (B.H. and N.H.)! Tweekloof, Thode A.1189 (N.H.)! Camperdown, Drummond, Galpin 10292 (N.H.)!

Orange Free State.—Viljoen's Drift, Burt Davy 7006 (N.H.)!

This species differs from *G. longicollis* in having a very long perianth-tube, usually more than twice the length of the bract; the inflorescence is nearly always 1-flowered, sometimes 2 or 3-flowered; the outer perianth-segments are longer than the inner. The flowers are creamy-white or yellowish, brown or green veined, sweetly scented. The anthers are half included and half exerted from the perianth-tube.

Corm depressed globose, about 2.5 cm. diam., tunics of coarse fibres, parallel in lower half. Basal sheaths 2, obtuse, about 3.5 and 5.5 cm. long. Plant 35—75 cm. high (usually about 60 cm.), stem simple, slender. Leaf 1 basal, fused round stem for half its length or more, shorter than inflorescence, firmly veined, margins and mid-rib well raised, narrow-linear, acuminate, cauline 2, similar to basal, with short, free, acuminate tips, almost entirely enclosing stem. Bract obtuse or acute, linear, 4—5.5 cm. long; bracteoles similar. Perianth-tube very slender, cylindrical, widening very slightly towards throat, curved, 2—3 times as long as bract, about 11 cm. 5—6 mm. diam. at throat; segments—3 outer similar, acuminate, 2.5—3.5 cm. long, about 1.2 cm. broad, 3 inner acute, shorter than outer, 2—2.5 cm. long, about 1 cm. broad. Stamens attached to perianth-tube shortly below throat, filament about 8 mm. long; anthers half included in throat of perianth-tube, sagittate, up to 1.5 cm. long. Style branches just overtopping stamens, 7 mm. long, apex flattened conduplicate. Seeds winged.

(4) *A. Forsythiana* Baker, Handbk. Irid. 186 (1892); Fl. Cap. VI, 131 (1896).

I have not seen the type, but from the description this seems to be a long-tubed form of *Gladiolus angustus* Ker and the name should therefore become a synonym of this species. A specimen in the Bolus Herbarium, Bachmann 298, named *A. Forsythiana* by Baker at Kew in 1888, is undoubtedly a form of *Gladiolus angustus* with a longer perianth-tube than is usual.

(5) *A. flexuosa* Baker. This is *Gladiolus flexuosus* Linn. f. Suppl. 96 (1781); Thunb. Diss. Glad. 9, t. 1 (1784).

There is a drawing at Kew of an imperfect specimen without leaves or corm and with poor flowers. On the sheet N. E. Brown has made the following notes, which he has published in his paper on the *Iridaceae* of Thunberg's Herbarium in Journ. Linn. Soc. XLVIII no. 319, p. 22 (1928).—"This is identical with the type of *Gladiolus flexuosus* Linn. f. and equals *Acidanthera flexuosa* Baker. As the perianth is irregular, I do not understand why it is not a true *Gladiolus*. There is no specimen like it in the Kew Herb." He also states, on the drawing only, that it is allied to *Gladiolus pulchellus* Klatt.

Without seeing the type I cannot be certain about this species, but in view of Dr. Brown's remarks, it seems best to leave this as *Gladiolus flexuosus* L.f. although examination of the type, when this is possible, may prove it to belong to the genus *Engysiphon*.

Acidanthera flexuosa Baker in Berl. Monat. XIX, 15 (1876) : Handbk. Irid. 186 (1892) ; Fl. Cap. VI, 131 (1896) and *Sphaerospora flexuosa* Klatt in Linnaea XXXII, 726 (1863), are the same plant.

Baker has overlooked Linne's and Thunberg's use of the name *Gladiolus flexuosus* and has given this name to a Tropical African plant (in Kew Bull. 1894, 390 ; Fl. Trop. Afr. VII, 372). As this is incorrect I propose changing this name to *Gladiolus gracilicaulis* Lewis nom. nov.

(6) *A. tubulosa* Baker. This is *Engysiphon pictus* (Foster) Lewis as to name but not description and *Engysiphon exscapus* (Thunb.) Lewis as to plant described. (See above, pp. 21, 23.)

(7) *A. rosea* Schinz. This is *Engysiphon roseus* (Schinz.) Lewis.

(8) *A. pauciflora* Benth. This is definitely a *Gladiolus*, related to *G. undulatus* and *G. Milleri* and may prove to be only a variety or form of the former species. For the present, until more material has been seen, it seems best to leave it as a separate species under the name *Gladiolus Bowkeri* Lewis nom. nov. (The name *pauciflorus* has already been used in this genus.) The specific name is in honour of Mr. Bowker, the finder of the type specimens. *Acidanthera pauciflora* (Baker) Benth. and Hooker Gen. Pl. III, 706 (1883) ; Baker Handbk. Irid. 187 (1892) ; Fl. Cap. VI, 132 (1896). *Montbretia pauciflora* Baker in Journ. Bot. 1876, 336.

The following note was made by myself at Kew in 1934 when I saw the type specimens—"Leaves similar to those of many *Gladioli* (§ *Blandi*) and in a couple of specimens on the type sheet they are distinctly spotted or mottled near the base as in *G. vomerulus*. The perianth-tube is comparatively short, slightly exerted from the bract, curved and distinctly

dilated in the upper part." There are photographs of the type sheet in the Bolus and National Herbaria.

(9) *A. brevicaulis* Baker, Fl. Cap. VI, 132 (1896). I do not know this species, but it is most probably a *Hesperantha*. I propose changing the name to **Hesperantha brevicaulis** (Baker) Lewis comb. nov.

(10) *A. Huttoni* Baker in Journ. Bot. 1876, 339; Fl. Cap. VI, 133 (1896) Journ. Linn. Soc. XVI, 160 (1877) Handbk. Irid. 187 (1892). This is *Hesperantha longituba* Baker and the name should become a synonym of this species.

A specimen in the National Herbarium from the type locality, Katberg, named *A. Huttoni* by N. E. Brown, was examined. The material is very poor, but the flower has three long style branches arising from the throat of the perianth-tube.

Eastern Province.—Katberg, Galpin 2067 (N.H.)!

(11) *A. Tysoni* Baker. This is **Hesperantha grandiflora** Lewis nom. nov. *Acidanthera Tysoni* Baker Handbk. Irid. 187 (1892); Fl. Cap. VI, 133 (1896). There is already a *Hesperantha Tysoni*, and therefore, as the flowers are the largest seen in the genus, I propose the above name. A figure on the type sheet in the Bolus Herbarium (? drawn by Tyson) shows the 3 long style branches arising at the throat of the perianth-tube, but also shows them and the stamens arranged rather to one side and arched, not in the centre and equally divaricating as is typical of the genus *Hesperantha*. As far as can be seen from the dried material there is considerable variation, the stamens sometimes being in the centre, equally divaricating, or all arranged to one side. Although differing in this point from the rest of the genus *Hesperantha* I feel that it can only belong to this genus on account of the characteristic style branches. The vegetative characters agree with those of *Hesperantha*.

Maclear Div.—Drakensberg, Galpin 6857 (B.H. and N.H.)! Griqualand East, near Cataracts on Mt. Currie, Tyson 1151 (type, in S.A.M. and B.H.)! MacOwan and Bolus, Herb. Norm. 895 (S.A.M.)!

(12) *A. capensis* Benth. This is **Tritonia flabellifolia** (Delaroche) Lewis comb. nov. *Acidanthera flabellifolia* N.E. Br. Kew Bull. 1929, 135. *Ixia flabellifolia* Delaroche, Descr. Pl. Nov. 20 (1766); *I. tubulosa* Burm. f. Fl. Cap. Prodr. 1. (1768) in part. *Acidanthera capensis* Benth. Gen. Pl. 111, 706 (1883); Baker, Handbk. Irid. 187 (1892); Fl. Cap. VI, 133 (1896). *Houttuynia capensis* Houtt. Handbk. XII, 448, t. 85 (1773). *Tritonia capensis* Ker in König and Sims Ann. 1, 228 (1805); Bot. Mag.

t. 618 (1803) ; Gen. Irid. 116 (1827) ; Klatt in *Linnaea* XXXII. 757 (1863). *Montbretia capensis* Baker in Journ. Linn. Soc. XVI, 168 (1877). *Gladiolus roseus* Jacq. Ic. t. 261 (1796). *Tritonia rosea* (Jacq.) Ait. Hort. Kew. ed. 2, 1, 91 (1810).

The bract is slightly larger and more acute than is usual in the genus *Tritonia*, but the corm, leaf and floral characters, as well as the membranous bract belong to that genus.

(13) *A. brevicollis* Baker. This is ***Gladiolus sabulosus*** Lewis nom. nov. (The name *brevicollis* is already used in the genus *Gladiolus*.)

Baker, in Fl. Cap. VI, 134 (1896), gives as a synonym *Gladiolus Gueinzii* Kunze in *Linnaea* XX, 14 (1847). If this is correct then the species should have been named *Acidanthera Gueinzii*, Kunze's specific name being the older, and should now be known as *Gladiolus Gueinzii*. According to the description, however, I do not think that they are the same and therefore propose the above name for this species. The type of *Gladiolus Gueinzii* is from "Cape of Good Hope," flowering in March. This species flowers from October to December and is found growing on sandy dunes along the coast from Knysna to Natal.

This is a puzzling species which does not fit into any of the genera as known at present, except *Gladiolus*, and from that it differs in its almost equal perianth-segments and stamens, which apparently are sometimes equally divaricating. The leaves are rather fleshy or thickened but not firm, the mid-rib and margins raised, but the other veins inconspicuous. The corm is globose, enclosed in fibrous tunics, which are more or less membranous but firm, more or less fused together or the fibres distinct, parallel in the lower half. The seed, which has a large, membranous wing, is typical of *Gladiolus*.

Description.—Corm globose, about 14 cm. diam. Plant 17—50 cm. high, usually about 30 cm. Stems simple or sometimes branched, firm. Leaves 2 or 3 basal, linear, acute, usually overtopping flowers, about 35—40 cm. long, 3—4 mm. broad ; cauline 2 or 3, lower similar to basal leaves, frequently bearing cormlets in axils, upper sheathing only and 2—5 cm. long. Inflorescence laxly 1—6-flowered, secund. Bract entirely herbaceous, obtuse or shortly acute, about 2 cm. long. Bracteoles similar to bract. Perianth-tube cylindrical, widening very slightly towards throat, 1.4 cm. long ; segments nearly equal, all with minute apiculus, arising slightly obliquely from perianth-tube so that 3 upper shortly exceed 3 lower in length, 3 upper 1.9—2 cm. long, 3 lower 1.8 cm. long, 3 outer ovate, obtuse, 9 mm. broad, 3 inner 1.2 cm. broad, slightly emarginate. Stamens arising shortly below throat of perianth-tube, equally divaricating or all arranged to one side ; filament 8 mm., anther

basifixed, 6 mm. long. Style straight, branches just short of or reaching top of anthers, slightly flattened and ciliate along margins, 3 mm. long. Ovary 4.5 mm. long, 2 mm. diam. Capsule 2.3—2.6 cm. long, outer wall membranous, 1 cm. across, inner walls firm. Seed 1.5—2 mm. diam., in centre of a broad, membranous, brown wing, about 1.2 cm. long, 8 mm. broad.

Knysna Div.—Groote River, J. Phillips 1201 (B.H.)! Port Elizabeth, Holland (without no., B.H.)! East London, Buffalo River, Murray, S.A.M. 21116! Bats Cave, Rattray, Muir 4534 (N.H.)! Near Gonubie River, Carter, N.B.G. 2375/30 (B.H.)! Bathurst Div., Kowie West, Tyson (without no. in B.H.)! Kentani, Pegler 817 (B.H. and N.H.)! Kei Mouth, Flanagan 2373 (B.H.)! Port Alfred, Tyson, Marloth no. 8512 (N.H.)! Port Shepstone, Mogg, N.H. 13953! Natal, Isipingo, Wood 9103 (B.H. and S.A.M.)! Durban, Wood 1092 (S.A.M.)! Umgeni River Mouth, Stainbank 55 (S.A.M.)!

(14) *A. ixioides* Baker, Handbk. Irid. 188, Fl. Cap. VI, 134.

I do not know this species. The description is inadequate and the type specimen, the only one quoted, is without locality. It might possibly be *Engysiphon brevitybus*, but according to Baker's description the perianth-tube is too short for that species. It might also be a *Gladiolus* related to *Gladiolus sabulosus*, and for the present, since the name must be changed, I propose calling it **Gladiolus ixioides** (Baker) Lewis comb. nov. Examination of the type is necessary. The type is Elliot 1174.

(15) *A. Fourcadei* L. Bolus in Ann. Bolus Herb. IV, 118, (1928).

From the description and dried material examined I have come to the conclusion that this species belongs to the genus *Geissorhiza* rather than *Engysiphon*. The bract and bracteoles are the same length, the stamens symmetrically arranged and the anther, which is up to 1.2 cm. long, as long as the filament. It is a distinct species, differing from all other species of *Geissorhiza* in the inflorescence. In many cases the plant is single-flowered, but in those plants which have 2 or sometimes 3 flowers, the lower flowers, instead of being sessile on the main axis, are borne singly at the apex of a short branch. It also differs from most species of *Geissorhiza* in the length of the bract, which is up to 2 cm. long, and the flower, which is very large for this genus. The name should now become **Geissorhiza Fourcadei** (L. Bolus) Lewis comb. nov.

(16) *A. Muirii* L. Bolus in Ann. Bolus Herb. Vol. 1, 195, (1915).

This is a *Hesperantha* and should be **Hesperantha Muirii** (L. Bolus) Lewis comb. nov. Examination of the type material shows that there is

a certain amount of variation in the length of the style branches. In some of the type specimens the style branches arise at the throat of the perianth-tube and are up to 1.5 cm. long, while in others the style is exerted a few mm. from the perianth-tube and the branches are 8—10 mm. long. The corm is more or less conical in shape, flat at the base, and has hard, woody, compact fibres arranged in vertical ridges so that it is slightly angled. This matches the corm of some *Hesperantha* species very well and the characters mentioned above are not observed in any other genus. The leaves and somewhat membranous bract also agree with those of *Hesperantha*. Considering these points, it seems that this species is best placed in this genus, the style-branches, corm and bract excluding it from all the others.

In the description the seeds were described as "winged." Examination of them shows that the seed, which is sharply angled when immature, has a very short projection at the angles which can scarcely be called a wing, and, as far as can be seen, there is a tendency for this to disappear in the mature seed.

***Hesperantha Muirii* var. *robusta* Lewis var. nov.**

A typo planta robustiore, inflorescentia pluribus floribus et quod sciam ramulis styli semper apice perianthi tubi exstitutis differt.

The plant is more robust than the type, there are more flowers in the inflorescence, and, as far as can be seen from specimens examined, the style branches always arise at the throat of the perianth-tube.

Corm up to 1.5 cm. diam., conical, flat at base, tunics arranged in rows, splitting upwards from base. Basal leaves 3 or 4, about 5.5 cm. long, 3 mm. broad: cauline 3 or 4, closely sheathing and entirely enclosing stem. Plant about 20 cm. high. Inflorescence compact, 3—6-flowered, usually 4 or 5-flowered.

Riversdale Div.—Plattekop Farm, 3 or 4 miles from Riversdale, Mrs. Ferguson, B.H. 19966! near Riversdale, Schlechter 1819 (N.H.)!

III. THE NEW GENUS THEREIANTHUS.

THEREIANTHUS Lewis gen. nov.

Gladiolus Linn. Sp. Pl. 37 (1753) partly, Thunb. Diss. Glad. 15 (1784) and Fl. Cap. 194 (1811) partly. *Beilia* Eckl. Top. Verz. 43 (1827) nomen nudum. *Watsonia* Ker in Kon. and Sims Ann. 1, 229 (1805) partly, not of Miller. *Watsonia* subgenus *Beilia* Klatt Ergänz. 19 (1882): Baker Fl. Cap. VI, 99 (1896).

Cormus globosus raro cylindricus, fibris tunicarum rigidis lignosis, regulariter parallelis. Folium radicale unicum lineare vel teres, rigidum, caule brevius; folia caulina 3—4 vaginantia vel semivaginantia. Bractea

regularly arranged. Bracteoles smaller and apices acuminate-lanceolate. Stamens inserted below throat of perianth-tube, cylindrical segments patentibus apiculatis. Staminis sub apice tubi inserta ovata. Bracteolae stylis bifidis brevioribus.

The name **Thereianthus** is derived from the Greek *thereia* = summer or belonging to summer and *anthos* = a flower.

The plants, which flower from November to January, are found in sandy places on flats, lower mountain slopes and plateaux. The various species are distributed usually very locally, along the coastal region of the Western Province, extending from the Camellian, Piquetberg and Ceres Divisions to Riversdale Division in the east. It is possible that these boundaries might be extended and that one or two additional species exist, but as they flower in the middle of summer, a season when not very much extensive collecting has been done, this genus has probably been rather neglected.

Corm globose, occasionally elongated and more or less cylindrical, seldom exceeding 1.5 cm. diam., usually less, situated shortly below ground surface. Tunic of hard, waxy, parallel fibres, or sometimes fine and reticulated. Stem usually simple, firm but fairly slender. Leaf 1 basal, linear or terete, firm, erect or curved, usually shorter than stem; 3 or 4 cauline, half or entirely sheathing, free part similar to basal leaf. Bract firm, frequently brown at time of flowering, not exceeding 1.5 cm. long, usually less. Bracteoles similar, completely fused or bifid at apex, usually shorter than bract. Inflorescence a compact or lax spike, flowers erect, spirally arranged. Perianth-tube straight or sometimes slightly curved, cylindrical; segments regularly arranged, equal, patent, recurving when fully mature. Stamens inserted just below throat of perianth-tube, symmetrically arranged or arranged to one side and slightly arcuate. Style branches bifid, recurved.

Ecklon, in Top. Verz. 43 (1827), removed two species from the genus *Gonolobus*, namely *G. squarrosus* Linn. and *G. patulus* Thunb. and placed them in a separate genus *Bolus*, but gave no description of the genus or the species. In König and Sims Ann. 1, 229 (1805) Ker described as a new species *Watsonia punctata*, which must probably be a narrow-leaved form of Lamb's *Gladstulius speciosus*. Klatt in Ergänzt. 19 (1882) made *Bolus* a subgenus of *Watsonia* and added three or four species to this group, describing them under the name *Watsonia*, and one species which he wrongly placed in a different genus, *Anomatheca*. (The type of *Anomatheca* is *A. juncus* Ker which, with one or two additional species, is at present placed in the subgenus *Anomatheca* of the genus *Lagarosmia*, according to Baker in Fl. Cap. VI, 89.) Baker followed Klatt in placing *Bolus*, with only a line of vague description, as a subgenus of *Watsonia*

(Fl. Cap. VI, 99, 1896), and placed in this subgenus 4 species and 2 varieties (also 1 doubtful species which does not belong here), including as synonyms *Beilia spicata* and *B. triticea* of Ecklon. In so doing Klatt and Baker have used the name *Beilia* in a different sense from Ecklon, and, in addition, there is no adequate description. In view of the above facts I consider that it is best to regard the name *Beilia* as a nomen nudum, and, as a name must be given to this genus which is distinct from *Watsonia*, I propose the name *Thereianthus*.

This genus forms a link between *Watsonia* and *Micranthus*. From the latter genus it differs in having a straight or nearly straight perianth-tube and in not having a very dense, many-flowered, two-ranked inflorescence. There are several points in which this genus differs from *Watsonia*, apart from the size of the plants, the much smaller flowers, stem leaves and corm. In *Watsonia*, with possibly one or two exceptions only, the perianth-tube is always curved and consists of two portions, the narrow cylindrical part at the base and the upper portion which is broadly cylindrical or funnel-shaped, the upper part equalling or shortly exceeding the lower part in length. The stamens are attached to the perianth-tube at the junction of the basal and upper parts, that is, about half-way down. In *Thereianthus* the perianth-tube is nearly always straight and erect. In one of two species it curves a little and widens very slightly just below the throat, or it remains the same width throughout, but it cannot be divided into two distinct portions as in *Watsonia*. The perianth-segments are equal, regularly arranged, at first patent then recurving. The stamens are attached to the perianth-tube just below the throat and are arranged to one side, slightly declinate, or sometimes symmetrically arranged. In *Watsonia* the perianth-segments are sometimes regularly arranged and more or less patent, very seldom recurving as the flower matures, the 3 inner broader than the 3 outer. More often the upper perianth-segment is more or less hooded or arched. With only two exceptions the stamens are always arcuate, usually arranged under the hooded segment, but in some of the species with patent segments the stamens are inverted, arranged at the lower side of the flower and facing the upper perianth-segment. *Thereianthus* has only 1 basal leaf which clasps the stem at the base, whereas with one or two exceptions, there are 2, 3 or 4 basal leaves in *Watsonia*, distichously arranged.

Thereianthus is also fairly closely allied to *Lapeyrousia*, from which it differs in its corm, which is globose, not flattened at the base, surrounded by firm or wiry fibres, which are parallel or reticulate, sometimes extending upwards to form a short neck. In two of the subgenera of *Lapeyrousia* the corm is conical in shape, flattened at the base, the tunics of firm fibres, which are usually fused together. (The third subgenus, *Anoma-*

theca, is distinct in having 2—6 basal leaves in a distichous rosette and an entirely different corm.) In addition, *Thereianthus* differs in its inflorescence, which is a simple, erect spike, whereas in *Lapeyrousia* the inflorescence is sometimes a congested, short, branched one, forming a rosette, or the stem is elongated but nearly always much branched.

KEY TO SPECIES.

Perianth-tube very short, included in bract ..	<i>racemosus</i> (1)
Perianth-tube exerted from bract, not very short.	
Inflorescence lax; bracts not imbricating ..	<i>juncifolius</i> (2)
Inflorescence compact to dense; bracts slightly to distinctly imbricating.	
Perianth-segments much shorter than perianth-tube.	
Basal leaf linear, occasionally lanceolate, falcate ..	<i>lapeyrousioides</i> (3)
Basal leaf terete, erect.	
Perianth-tube much longer than segments ..	<i>longicollis</i> (4)
Perianth-tube shortly exceeding segments ..	<i>spicatus</i> var. <i>linearifolius</i> (5)
Perianth-segments as long as or longer than perianth-tube, occasionally slightly shorter.	
Leaf linear, veins prominent ..	<i>spicatus</i> (5)
Leaf terete or very narrow-linear, veins not distinct nor prominent.	
Perianth-tube extremely narrow throughout, not widening at all; flower white ..	<i>ixioides</i> (6)
Perianth-tube dilating slightly towards throat; flower blue or purple.	
Leaf terete, veins not or scarcely visible; 3—6 well-marked parallel veins running from base to apex of perianth-segments ..	<i>bracteolatus</i> (7)
Leaf very narrow-linear, veins visible, fairly distinct; veins on perianth-segments about 3 parallel, others spreading side and upwards from them ..	<i>spicatus</i> var. <i>linearifolius</i> (5)

(1) **T. racemosus** (Klatt) Lewis comb. nov.

Watsonia racemosa Klatt, *Erganz.* 20 (1882). The type collecting of this species is Zeyher 1609 (Co-types in S.A.M. and B.H.). Klatt gives as a synonym *Ixia maculata* var. *minor* Andr. Bot. Rep. t. 256, which is not the same as Zeyher 1609, but is very definitely an *Ixia*. In Fl. Cap. VI. 181 (1896) Baker quotes *W. racemosa* Klatt as a synonym of *Ixia columellaris*, and on p. 104 quotes Zeyher 1609 and no other specimen under *W. minuta* Klatt. In his description of *W. minuta* (Erganz. 19) Klatt makes no reference to Zeyher 1609 (which, as already stated, he quotes under *W. racemosa*), the only numbers given being Eck. and Zey. 189 and Drege 1551. It seems fairly clear that Baker has confused

W. minuta Klatt and *W. racemosa* Klatt. Omitting the reference to *Lexia* (Andr. Bot. Rep. t. 256) the correct name should therefore be *W. racemosa* Klatt, his description agreeing with the type specimens quoted, Zeyher 1609.

In the Bolus Herbarium there are seven specimens belonging to the species collected by Miss Edwards near Porterville, three of which bear short branches near the top of the stem. All other specimens seen are unbranched.

Corm globose, about 1 cm. diam., tunics of fine, netted fibres, parallel near base. Stem 15—25 cm. high, slender, 1—1.5 mm. diam., simple or bearing a short branch near apex. Basal sheaths 2, obtuse, brown, membranous, upper not exceeding 2.8 cm. long. Leaf falcate, fused round stem for one-third its length, linear, acute, 10—16 cm. long, up to 3 mm. broad, mid-rib and margins raised; 3 or 4 cauline, closely sheathing for half their length, apex acuminate. Inflorescence compact, 5—25-flowered. Bract membranous, brown, shortly acute or obtuse, about 4 mm. long. Bracteoles membranous, colourless, free at apex. Perianth-tube included in bract, 1 mm. long; segments 8 mm. long, 3—4 mm. broad. Stamens with filaments 3 mm. long, anthers 3 mm. long. Style reaching top of filaments, branches short.

Piquetberg Div.—Zeyher 1609 (co-types in S.A.M. and B.H.)! near Porterville, Miss Edwards, B.H. 13367!

(2) ***T. juncifolius*** (Baker) Lewis comb. nov.

Morphixia juncifolia Baker in Journ. Bot. (1876) 238: Journ. Linn. Soc. XVI, 98 (1877). *Anomatheca calamifolia* Klatt in Ergänz. 21 (1882). *Watsonia juncifolia* Baker, Fl. Cap. VI, 105 (1896).

The type and only collecting quoted by Baker is Zeyher 1619 from Piquetberg Div. Klatt, under his description of *Anomatheca calamifolia*, gives *Morphixia juncifolia* as a synonym and quotes as the only collecting Drège 1619. In the same publication, Ergänz. p. 19, he quotes Drège 1619 under *Watsonia subulata*. Klatt has probably made a mistake and the collector of the type of *T. juncifolius* is Zeyher, no. 1619.

Corm about 1 cm. diam., globose or somewhat elongated: fibres fine, extending upwards to form a short neck. Stem very slender, simple or occasionally bearing 1 or 2 short branches, 1 mm. or less in diam., 30—35 cm. high. Basal sheaths 2, outer obtuse, inner acuminate, soft in texture, not always persistent. Leaf filiform, very slender, often overtopping inflorescence, fused round stem for short portion at base only, 15—50 cm. long, less than 1 mm. diam., cauline 2 or 3, when 3 the lowest resembling basal leaf but much shorter, other 2 reduced to short sheaths, 3 cm.—3 mm. long. Inflorescence lax, 2—10.

flowered, bracts not imbricating. Bract soft, membranous, acute or obtuse, 5 mm. or less long. Bracteoles like bract, slightly longer, completely fused. Perianth-tube well exserted 1.1—2 cm. long, widening slightly towards throat; segments shorter than tube, up to 1 cm. long, 6 mm. broad. Stamens—filaments 3—4 mm. long, anthers 4 mm. long. Style reaching top of anther, branches overtopping anthers.

Caledon Div.—Hottentot Holland Mtns., Zeyher 1619 (S.A.M.)! near Pringle Bay, Pillans 8185 (B.H.)! Tulbagh Div. Twenty-four Rivers, Zeyher 1619 (S.A.M.)! Cold Bokkeveld, Skurfdeberg, near Wagebooms Rivier, Schlechter 10169 (B.H.)! near Porterville, Edwards, B.H. 13447 and 16150!

(3) **T. lapeyrousioides** (Baker) Lewis comb. nov.

Watsonia lapeyrousioides Baker, Handbk. Irid. 178 (1892); Fl. Cap. VI, 105 (1896). *Anomatheca juncea* Herb. Drège, non Ker.

Corm 1 cm. or less in diam., tunics of fine netted fibres. Plant 10—30 cm. high; stem simple, slender, about 1 mm. diam. Leaf falcate, lanceolate, acute, often linear, mid-rib and margins somewhat raised, 4—22 cm. long, up to 6 mm. broad; cauline 2—3, lowest resembling basal, upper short, sheathing. Inflorescence fairly compact, bracts just imbricating, 4—14-flowered. Bract obtuse or acute, soft, 6—8 mm. long. Bracteoles nearly colourless, shorter than bract. Perianth-tube well exserted, slender, dilating slightly towards throat, 2—3 cm. long; segments oblong, obtuse, 8 mm. long, 4 mm. broad. Stamens with filaments 4 mm., anthers 3 mm. long. Style just exserted from throat of perianth-tube, branches shorter than stamens.

Paarl Div.—Bains Kloof, Schlechter 9126 (B.H.)! L. Bolus, B.H. 22439! Carter, B.H. 22438! Grant 2648 (B.H.)! Wellington, Joubert, N.B.G. 2630/29 (B.H.)! Witte River Valley, Thorne, S.A.M. 46562! Worcester Div., Du Toits Kloof, Bolus, B.H. 5497! between Villiersdorp and French Hoek, Bolus B.H. 5251! Tulbagh Div., Tulbagh Waterfall, E. & L. 189 (S.A.M.)!

Var. elatior Lewis var. nov.

A forma typica planta altiora, 24—46 cm., foliis longioribus augustioribusque, inflorescentia longiore, floribus 14—36, bracteis brevioribus, circa 5 mm. longis, differt.

Ceres Hills, Guthrie 2208 (type, in B.H.)! near Ceres, Bolus, B.H. 8342! Leslie, N.B.G. 46/32 (B.H.)!

Plant taller than in typical form, 24—46 cm. high. Leaf somewhat longer and narrower. Inflorescence longer, 14—36-flowered. Bracts shorter, about 5 mm. long.

(4) **T. longicollis** (Schltr.) Lewis comb. nov.

Watsonia longicollis Schltr. in Engl. Bot. Jahrb. Vol 27 (1900), p. 106.
W. punctata Ker var. *longicollis* Baker Handbk. Irid. 177 (1892): Fl. Cap. VI, 104 (1896).

Plant slender, 15—25 cm. high. Corm ovoid, tunics of netted fibres, thickened at base, ending in stiff bristles at apex. Leaf 1 basal, 2 cauline, erect or spreading slightly, firm, filiform, compressed, lowest not overtopping flowers, uppermost shorter, scarcely reaching middle of inflorescence. Inflorescence many-flowered. Bract firm, oblong, acute or acuminate, veined, 1—1·2 cm. long. Bracteoles bifid at apex, margins membranous, about as long as bract. Perianth-tube slender, elongated, filiform, cylindrical, dilating towards throat, 2·5—3·3 cm. long; segments oblong, shortly apiculate, 1·3 cm. long, about 5 mm. broad. Stamens with anther linear, 6 mm. long. Style branches 5 mm. long, just overtopping anthers.

Tulbagh Div., near Waterfall, alt. 1,200 ft., Schlechter 9155 (type, co-type in B.H.)! Zeyher 445 (B.H.)! Porterville, Edwards 80 (B.H.)!

(5) **T. spicatus** (Linn) Lewis comb. nov.

Gladiolus spicatus Linn. Sp. Pl. 37 (1753); Thunb. Diss. Glad. 15 (1784). *Watsonia punctata* Ker, Kon. and Sims Ann. 1. 229 (1805); Gen. Irid. 124 (1827); Klatt Erganz. 19 (1882); Baker, Handbk. Irid. 177 (1892) partly; Fl. Cap. VI, 104 (1896) partly. *Beilia spicata* Eckl. Top. Verz. 43 (1827) nomen nud. ?*Gladiolus rubens* Vahl. Enum. 11. 98 (1806). ?*Watsonia rubens* Ker. Gen. Irid. 124 (1827).

Plant about 30 cm. high; stem fairly sturdy, up to 4 mm. diam., leaf firm, flat, linear, acute, veins prominent, nearly always brown at time of flowering, about 20 cm. long, up to 6 mm. broad; cauline 3, almost entirely sheathing stem, free part like basal leaf, lowest usually brown, others green, 19·5, 13 and 7 cm. long. Inflorescence dense, many-flowered. Bract firm, brown, acute, 1·3 cm. long, 6 mm. broad. Bracteoles 1·1 cm. long. Flowers pale blue or purple, 3 lower segments usually marked with deeper blue and white; perianth-tube straight or slightly curved just below throat, about 1·2 cm. long; segments linear-oblong, obtuse or shortly acute, 3 parallel veins from base to apex, other veins spreading sideways and upwards, not very distinct, 1·5 cm. long, 5 mm. broad. Stamens with filaments 4 mm., anthers 5 mm. long. Style reaching half way up anthers, branches 3 mm. long, spreading between anthers.

Cape Peninsula.—Table Mtn., Pappe, S.A.M. 21072! Paarl Div.—Paarl Mt., Grant 5027 (B.H.)! Stellenbosch Div.—Somerset West, Mart-

Jey. B.H. 22440! Caledon Div. near Sir Lowry's Pass, Bolus B.H. 4210!
Hottentot Holland Mtns., Pappe, S.A.M. 21069!

T. spicatus var. linearifolius Lewis var. nov.

Folia longiora, angustissima, linearia vel raro subteretia, firma, nervis sat prominentibus. Flores quam typicas aliquando minores; tubo perianthii segmentis aequilongo vel longiore.

French Hoek Div.—mtns. near French Hoek, Salter 2973 (type, in B.H.)! mtns. north of French Hoek Pass, Pillans 7624 (B.H.)! Tulbagh Div., Tulbagh, Pappe, S.A.M. 21070! E. and Z. 188 (S.A.M.)! Pappe, S.A.M. 48544! Caledon Div., near mouth of Palmiet River, Salter 5180 (B.H.)!



FIG. 1. *Thereianthus spicatus*. 1. Bract $\times 1$. 2. Bracteoles $\times 1$. 3. Young flower $\times 1$. 4. Young flower, side view $\times 1$. 5. Old flower $\times 1$. 6. Flower, half-section $\times 2$. 7. Style branches $\times 2$. 8. Portion of leaf $\times 2$.

Leaves longer, very narrow, linear to subterete, firm, veins fairly prominent. Flowers sometimes smaller than in typical species, perianth-tube equalling or longer than segments.

The description of *T. spicatus* given above is of a plant which I take to be the same as *Gladiolus spicatus* of Linn. and Thunb. I have not seen their types, but Dr. N. E. Brown has made the following comment about Thunberg's type sheet in the Journ. of Linn. Soc. XLVIII, 31 (1928): "A species of *Watsonia*. This is considered by Baker and Klatt to be

Watsonia punctata Ker, but it seems to differ in having flat leaves." Thunberg described the flowers as blue, bracts lanceolate, acute, and distinguished it from *Gladiolus triticeus* (*T. bracteolatus*) by its broader leaves and acute bract.

According to Baker in Fl. Cap. VI, 98 (1896), Ker has misunderstood *Gladiolus spicatus* Linn. and has given the name *Watsonia spicata* (Ker. in Kon. and Sims Ann. 1, 229 (1805); Gen. Irid. 123 (1827), which he incorrectly based on *Gladiolus spicatus* Linn., to the plant which is now known as *Micranthus tubulosus* N.E. Br. (= *M. fistulosus* Eck. Top. Verz. 44 (1827). Ker then described as a new species *Watsonia punctata* (Ker, Kon. and Sims Ann. 1, 229 (1805) and this most probably is a narrow-leaf form of Linné's *Gladiolus spicatus*, possibly even the plant which I have named *T. spicatus* var. *linearifolius*. In *T. spicatus* considerable variation in the width of the leaf is found, from 2—6 mm. It is, however, always flat, the veins prominent, although in the variety the leaf is sometimes terete.

I have not, unfortunately, seen Ker's description nor Linné's type, so am unable to confirm the above.

(6) ***T. ixioides* Lewis sp. nov.**

Cormus 1·5 cm. diam., tunicis e fibris fortibus, supra crassis, reticulatis, infra parallelis, compositis. Planta 25—45 cm. alta, caule simplice, gracile. Folium teres; folia caulina 3 vel 4, semivaginantia, supremum 1 cm. vel ultra. Spica compacta, 6—7-flora. Bractea basi herbacea, superne brunnea, obtusa vel acuta, bracteis superioribus amplexis. Bracteolae coalitae apice liberae. Tubus perianthii e bractea exsertus, rectus, gracillimus, 1—1·2 cm. longus, apice circa 1 mm. diam., segmentis aequalibus, acutis. Stamina filamenta 3 mm., antherae 6 mm. Stylus ad basum antherarum attingens, ramulis sat longis, bene curvatis.

Paarl Div.—Summit of Bains Kloof, Salter 5117 (type, in B.H.)! Grant 2644 (B.H.)! Worcester Div., Du Toits Kloof, Tyson 904 (S.A.M.)!

The flowers are pure white or the 3 lower perianth-segments have a round, bluish-mauve spot near the base and blue anthers. This species is distinct in having a perianth-tube which is filiform, cylindrical throughout, very slender, the flower closely resembling the flower of some species of *Ixia*.

Corm 1·5 cm. diam., tunics of strong, wiry fibres, coarsely reticulate above, parallel below. Plant 25—45 cm. high, stem simple, slender and wiry, about 1·5 mm. diam. Leaf fused round stem at base, terete, 22—45 cm. long, 1—1·5 mm. diam.; cauline 3 or 4, sheathing for half this length, uppermost sometimes 1 cm. long. Inflorescence compact, 6 or 7-flowered. Bract herbaceous at base, brown above, obtuse or acute,

7—11 mm. long, overlapping bract above. Bracteoles free at apex, much shorter. Perianth-tube exerted from bract, straight, very slender, 1—1.2 cm. long, 1 mm. or less diam. at throat; segments equal, acute, 1.2 cm. long, 5 mm. broad. Stamens with filaments 3 mm., anthers 6 mm. long. Style reaching top of filaments, branches fairly long, well curved.

(7) **T. bracteolatus** (Lam.) Lewis comb. nov.

Gladiolus bracteolatus Lam. Encycl. Method. II 725 (1786). *Gladiolus subulatus* Vahl. Enum. 11, 99 (1806). *Watsonia subulata* Klatt Erganz. 19 (1882). *Gladiolus triticeus* Thunb. Fl. Cap. 1, 194 (1811). *Beilia triticea* Eckl. Top. Verz. 43 (1827) nomen nudum. *Watsonia punctata* Ker var. *triticea* Baker, Handbk. Irid. 177 (1892); Fl. Cap. VI, 104 (1896).

Corm globose or cylindrical, about 1.5 cm. diam., tunics of hard, woody fibres. Plant 17—25 cm. high. Leaf brown at time of flowering, terete, firm, veins scarcely visible, about 15 cm. long, 1 mm. diam.; 3 cauline, half sheathing, upper half terete. Inflorescence 7—14-flowered. Bract firm, brown, sometimes obtuse, usually shortly acute, 9 mm. long, 5 mm. broad. Bracteoles completely fused, 8 mm. long. Perianth-tube exerted slightly from bract, straight or slightly curved, erect, dilating slightly towards throat, segments oblong, obtuse, 1.5 cm. long, 6 mm. broad. Stamens with filaments 1 cm. long, anthers 4—5 mm. Style reaching top of anthers, branches overtopping stamens.

Cape Peninsula.—Camps Bay, Zeyher 5038 (S.A.M.)! Table Mt., half way down Constantia Nek, Gillett 3365 (B.H.)! Muizenberg Mt., Bolus B.H. 3305! Vlaggeberg, Dod 345 (B.H.)! Redhill, Penfold, N.B.G. 2465/31 (B.H.)! Tulbagh Div.—Twenty-four Rivers, Zeyher 1608 (S.A.M.)! Clanwilliam Div.—near Elands Kloof, Schlechter 9765 (B.H.)! Caledon Div.—Palmiet River, near Grabouw, Bolus, B.H. 3305! btn. Caledon and Hermanus, Barnard, B.H. 22441! Bredasdorp Div., plateau on mountain top near Bredasdorp, Galpin, B.H. 22440!

A form which seems to belong here is Barnard (S.A.M. 27385) from Zonder Einde Mts. This has a longer perianth-tube, up to 1.5 cm. long, and shorter segments, otherwise it agrees very well with the above description.

I have not seen Lamarck's type (*Gladiolus bracteolatus*), but from his description, which is a fairly detailed one, I am in no doubt that it is the same as those quoted as synonyms above, and that his specific name should therefore be given to the species.

The flowers are bright purple, each segment marked with deeper purple, the 3—5 more or less parallel veins running from base to apex

distinct, in living and dried flowers. This species, which has frequently been confused with *T. spicatus*, is distinct in having terete leaves, the veins scarcely visible, the bract shorter and more or less obtuse, and the veining on the perianth-segments well marked.

(*Doubtful Species.*) **T. minutus** (Klatt) Lewis comb. nov.

Watsonia minuta Klatt, *Erganz.* 19.

According to Klatt's description the leaves are linear-lanceolate, about 3 mm. broad. Stem about 15 cm. high. Bract 4 mm. Inflorescence 2.5—5 cm. long, densely flowered. Flowers purple: perianth-tube 4 mm. long; segments 4 mm. long.

Worcester, Waterfall, E. & Z. no. 189. Du Toit's Kloof mountain and waterfall, Drège 1551, Herb. Lubeck.

I do not know this species, which seems very near *T. racemosus*, but differs in having a longer perianth-tube and shorter segments. Baker has confused this species with *T. racemosus* (see note under that species).

IV. VARIOUS NEW SPECIES OF IRIDACEAE.

Romulea longituba Lewis sp. nov.

Cormus ignotus. Folia 3 vel 4, filiformia, flores superantia, 1 mm. vel minus diam. Pedicellus 3.4—4 cm. longus, sine pedunculo. Bractea angusta, herbacea, acuminata, 4—6 cm. longa. Bracteolae omnino coalitae, bracteae similes. Perianthium probabiliter flavum, tubo gracillimo, 5.5—6.5 cm. longo, cylindrico sed circa 1 cm. ad apicem infundibuliforme: segmentis breviter acutis, 3—3.5 cm. longis, 6—9 mm. latis. Stamina ad tubum perianthii breviter infra apicem adnata. Stylus ad apicem antherarum non attingens.

Griqualand East, in graminosis summi montis Ingeli. Tyson 1267 (type, in S.A.M.)! Flores Martis.

This distinct species differs from the common type of *Romulea* in having a very much longer, cylindrical perianth-tube, which is funnel-shaped at the apex only. In the great majority of species of *Romulea* the perianth-tube is short, nearly always under 1 cm. in length, and funnel-shaped. *Romulea MacOwani* (Baker) from the Somerset East Division, forms a link between the common form and *R. longituba*. Baker, in his description, says that the perianth-tube is up to $\frac{3}{4}$ inch (about 2 cm.) long, but in material under the type number in the S.A.M. Herbarium one of the flowers has a perianth-tube 4 cm. long. The corm has a large, flattened base.

R. longituba is undoubtedly very closely related to *L. MacOwani* and must, therefore, have the same type of corm.

Corm not seen. Leaves 3 or 4, filiform, overtopping flowers, up to 28.5 cm. long, 1 mm. or less in diam. Pedicel 3.4—4 cm. long; no peduncle present. Bract narrow, acuminate, herbaceous, 4—6 cm. long. Bracteoles completely fused, exactly like bract. Perianth probably yellow; tube very slender, cylindrical except 1 cm. towards throat, which is funnel-shaped, 5.5—6.5 cm. long; segments shortly acute, 3—3.5 cm. long, 6—9 mm. broad. Stamens attached to perianth-tube shortly below throat, filament 5 mm., anther 8 mm. long. Style not reaching top of anthers.



FIG. 2. *Galaxia albiflora*. 1. Plant $\times 1$. 2. Bract $\times 2$. 3. Bracteoles $\times 2$. 4. Flower $\times 2$. 5. Flower, half-section $\times 2$. 6. Outer perianth segment $\times 2$. 7. Inner perianth segment $\times 2$. 8. Stamens and stigma $\times 3$. 9. Gynaecium $\times 3$. 10. Stigma $\times 4$.

***Galaxia albiflora* Lewis sp. nov.**

Planta ad 9 cm. alta (cormo incluso), parte supra terram 4 cm. vel minus. Cormus globosus, tunicis e fibris crassis, rugosis, rigidis compositis. Vagina basalis 1, sine pigmento. Folia 2, caulina, breviter lanceolata, acuta vel obtusa, firma, nitida, divaricata, glabra vel margi-

nibus minute ciliatis, ad 4.5 cm. longa, 6 mm. lata. Bractea erecta, foliis similis sed angustior, 4 cm. longa, 4 mm. lata. Bracteolae membranaceae totius herbaceae, acutae. Perianthium parvum, circa 1 cm. diam., album, tubo apice luteo, segmentis exterioribus externe caeruleo-viridibus laeviter puniceo virgatis; tubo 1.1 cm. longo; segmentis obtusis, minute mucronatis, exterioribus 1 cm. longis, 4 mm. latis, interioribus 9 mm. longis, 3 mm. latis. Stamina:—filamentis 4 mm., antheris erectis, ad stylum adpressis, 1.5 mm. longis. Stylus antheras paulo superans, stigmatibus lobis complanatis, ciliatis. Ovarium 4 mm. longum.

Cape Peninsula, Rondebosch Common, Lewis, S.A.M. 54289 (type)! Blaauwberg, Pillans, B.H. 18564! Malmesbury Div., Langebaan, Lewis, B.H. 20704!

Flowers July—August.

The flowers of all *Galaxias* are fugitive, lasting only a few hours and only opening on sunny days during the winter and early spring. This small-flowered species seems to be even more fugitive than usual, the flowers, as far as I have been able to see, remaining open for only about four hours during the hottest part of the day. As only one flower is produced to each bract and bright sunshine is essential, several days might elapse between the opening of two flowers on one plant during unfavourable weather. It is possible that this inconspicuous species, which has been found growing with *Galaxia fugacissima (graminea)* on flat, open ground, might be less rare than it at present appears to be. Very few specimens have been collected, but it is possible that, as the flowers are so small and fugacious, this species has been overlooked.

Plant up to 9 cm. high (corm included), only 4 cm. or less above ground. Corm spherical, 8 mm. diam., tunics of coarse, vertically ridged fibres. Basal sheath 1, colourless, 2—3 cm. long. Leaves 2 cauline, shortly lanceolate, acute or obtuse, firm, shiny glabrous or minutely ciliate, spreading, up to 4.5 cm. long, 6 mm. broad. Bract like leaf but erect, narrower, 4 cm. long, 4 mm. broad. Bracteoles membranous, herbaceous at apex only, acute, 1.3 cm. long, 4 mm. broad. Flower very small, about 1.5 cm. diam. when fully open, white, yellow at throat, outer segments bluish-green streaked with red on outside; perianth-tube, 1.1 cm. long; segments obtuse, minutely mucronate, outer 1 cm. long, 4 mm. broad, inner 9 mm. long, 3 mm. broad. Stamens—filaments 4 mm., anthers erect, adpressed to style, 1.5 mm. long. Style reaching top of stamens, stigma just overtopping anthers, flattened, ciliate. Ovary 4 mm. long.

Geissorhiza umbrosa Lewis sp. nov.

Planta gracilis, diffusa vel erecta, caule simplice vel raro ramoso, fere flexuoso, 10—30 cm. alta. Cormus globosus, tunicis e fibris compactis, sat teneris, pallide brunneis, apice setosis brevibus, compositis. Folia 1 vel 2 basalia, anguste linearia, acuminata, prope subteretia, nervo medio marginibusque bene incrassatis, nervis alteris sat manifestis, fere brevia falcataque, sive longiora recta, 4—29 cm. longa: caulina 1 vel 2, supremum brevissimum, vaginantem, 2—2.5 cm. longum. Inflorescentia laxa, ad 6-flora, plerumque 1 vel 2-flora. Bractea truncata, apice membranacea, obtusa. Bracteolae omnino coalitae, bracteae similes. Tubus perianthii 4 mm. longus, segmentis exterioribus oblongis, obtusis, quam interiora leviter longioribus angustioribusque. Stamina ad apicem tubi adnata. Stylus staminas superans erectus vel raro curvatus, ramulis recurvatis, minute ciliatis, non ampliatis.

Cape Peninsula, top of Table Mtn., Lewis, S.A.M. 54288 (type)! Bolus, B.H. 4985 and 4615 (B.H.)! Orange Kloof, Dod 3365 (B.H.)!

This species is nearest *G. setifolia*, from which it differs in having slightly larger and fewer flowers in the inflorescence, the leaves usually falcate and narrow-linear, distinctly nerved, instead of terete, smooth and more or less filiform, the bract truncate, membranous at the apex only, instead of acute and almost entirely membranous. It seems to prefer damp rock ledges in the shade, in which habitat the plants are short, one or two-flowered and have spreading leaves. More robust specimens less frequently found growing in sunnier positions among other plants. These latter are taller and have erect leaves, the stem occasionally branched and have up to six flowers in the inflorescence.

Plant slender, sprawling or erect, stem simple or occasionally branched, often flexuose, 10—30 cm. high. Corm spherical, about 7 mm. diam., tunics of light brown, compact but fairly soft fibres, ending in short bristles. Leaves 1 or 2 basal, narrow-linear, acuminate, margins and mid-rib well raised, appearing subterete, veins distinct, frequently short and falcate, if longer than straight and erect, 4—29 cm. long; 1 or 2 cauline, uppermost a short sheath only, 2—2.5 cm. long. Inflorescence up to 6-flowered, most often only 1 or 2-flowered. Bract truncate, membranous at apex, obtuse, about 6 mm. long and broad. Bracteoles completely fused, similar to bract. Flower white, perianth-tube pale green, outer segments pink or red outside; tube 4 mm. long, segments oblong, obtuse, outer slightly longer and narrower than inner, about 1.2 cm. long, 5 mm. broad. Stamens attached to throat of perianth-tube, filaments 4 mm., anthers 3 mm. long. Style overtopping stamens, erect or sometimes curved, branches recurved, minutely ciliate, not flattened.

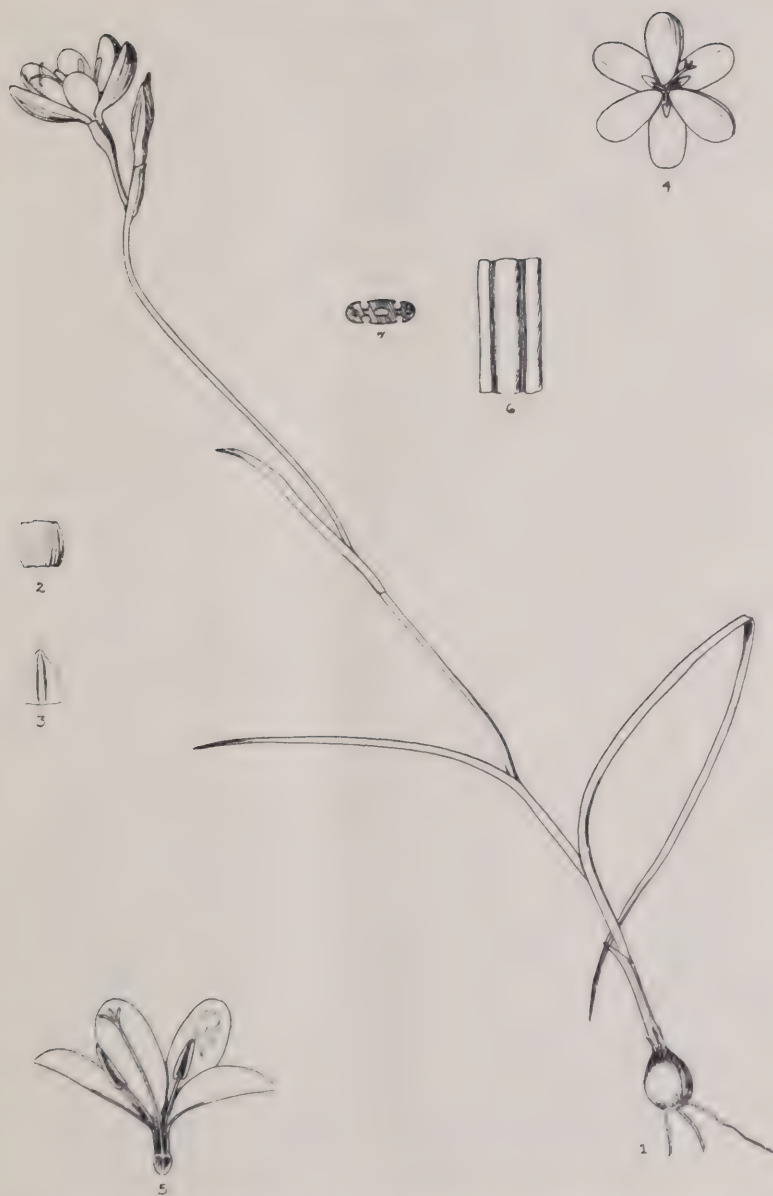


FIG. 3. *Geissorhiza umbrosa*. 1. Flowering plant $\times 1$. 2. Bract $\times 1$. 3. Bracteoles $\times 1$. 4. Flower $\times 1$. 5. Flower, half-section $\times 2$. 6. Portion of leaf $\times 6$. 7. Transverse section of leaf $\times 6$.

Geissorhiza teretifolia Lewis sp. nov.

Cormus globosus, circa 1 cm. diam., fibris tunicarum rigidis, lignosis, imbricatis, e base aequaliter scissis. Planta 15—35 cm. alta, caule glabro, firmo, simplice vel ramis fere infra dimidiam exstitibus. Vagina basalis 1, acuminata. Folium basale 1, caulem superans, teres, sat carnosum, erectum, basi caulem vaginante, circa 1 mm. diam.; folia caulina 2, inferiorum 4—8 cm. supra basem caulis insertum, vagina 4—8 cm. longa, nervis numerosis sat prominentibus, lamina terete, 11—23 cm. longa; superiorum simile sed multo brevior, semivaginanans. Inflorescentia secunda, laxa, 2—8-flora. Bractea viridis, herbacea, apice membranacea mutata, acuta, tener. Bracteolae coalitae, bracteae similes. Perianthii tubus bracteae aequilongus: segmenta oblonga, breviter acuta vel obtusa, exteriora 1.7 cm. longa, 8 mm. lata. Stamina perianthii tubo 2 mm. infra apicem adnata. Stylus antheras superans, ramulis recurvatis. Ovarium ovoideum, 2 mm. longum, 2 mm. diam.

Cape Peninsula.—Ottery Road Station, Lewis S.A.M. 53097! Kenilworth Race Course, Lewis, S.A.M. 53064 (type)! Salter 7738 (B.H. and S.A.M.)! Worcester Div.—Hex River Valley, Mrs. Davidson no. 75 (S.A.M.)! near Brand Vlei, Lewis, B.H. 20414! Cape Peninsula, without precise locality, E. and Z. 427, partly (S.A.M.)!

In appearance this species resembles *G. imbricata*, but it differs from that and all other species in having terete, rather fleshy leaves. It is found growing in shallow water on the edges of seasonal marshes and pools. As far as I know it is the only species which actually grows in water. The flower is usually pure white, sometimes tinged with mauve outside.

Flowering season September—October.

Corm globose, about 1 cm. diam.; tunics of hard, compact, imbricating rows of fibres, evenly cut up from base. Plant 15—35 cm. high; stem glabrous, firm, simple or more often branches from below the middle. Basal sheath 1, acuminate, about 6 cm. long. Leaf 1 basal, overtopping stem, terete, somewhat fleshy, erect, sheathing stem at base, up to 35 cm. long, about 1.5 mm. diam.; 2 cauline, lower arising 4—8 cm. above base of stem, sheathing part 4—8 cm. long, many and closely veined, upper part terete, 11—23 cm. long; upper cauline similar to lower but much shorter, half sheathing, half free. Inflorescence secund, laxly 2—8-flowered. Bract green, herbaceous, becoming membranous in upper half as it dries, acute, soft, up to 1.5 cm. long. Bracteoles fused, same as bract. Perianth-tube just reaching top of bract. 5—6 mm. long; segments oblong, shortly acute or obtuse, outer 1.7 cm. long, 8 mm. broad, inner 1.6 cm. long, 9 mm. broad. Stamens attached to perianth-tube 2 mm. below throat, filaments 5 mm., anthers 5 mm. long. Style



FIG. 4. *Geissorhiza teretifolia*. 1. (in two parts) Plant $\times 1$. 2. Bract $\times 1$. 3. Bracteole $\times 1$. 4. Flower $\times 1$. 5. Flower, half-section $\times 1$. 6. Leaf, transverse section $\times 10$.

overtopping stamens, 1.5 cm. long, branches recurved, 4 mm. long. Ovary ovoid, 2 mm. long, 2 mm. diam.

***Bobartia paniculata* Lewis sp. nov.**

Plantae plures concretæ; rhizoma lignosum, breve, basibus foliorum mortuum fibris crassis superne 12 cm. productis. Folia basalia in rosula densa, circa 5, linearia, erecta, firma, acuminata, nervis obscuris. Pedunculum rigidum, firmum sed flexile, complanatum, circa 80 cm. altum (floribus inclusis). Spatha exterior erecta, herbacea, firma, acuta; interior exteriori similis. Inflorescentia paniculata, terminalis in ramulis omnibus, cymosa, cymis trifloribus, ramis 1—3, gracilibus, flexuosis, viscidis, ramulosis ex axillis spatharum brevium viscidorum. Bractea exterior herbacea, obtusa; interior obtusa, marginibus incurvatis. Perianthium flavidum, segmentis obtusis, circa 1.2 cm. longis, 3 mm. latis. Stamina breviter, filamentis 2 mm., antheris 2—3 mm. longis. Stylus 1 mm., ramulis 3 mm. longis. Ovarium angulatum, ad apicem latius. Capsula apice dehiscens.

Oudtshoorn Div., lower mountain slopes, Kamanassie, Zinn, S.A.M. 54287 (type, in S.A.M.)! Kamanassiberg, 5,500 ft., Compton 10394 (N.B.G.).

Flowering season January—February.

The paniculate inflorescence distinguishes this species from all others at present described. As is usual in *Bobartia*, the inflorescence arises in the axil of a spathe borne at the apex of a long, slender peduncle, but instead of the cymes being sessile and forming a compact head as is the case in all the other species seen, each cyme is borne at the apex of a short, slender pedicel, which in turn arises from a short, slender branching stem. The peduncle is glabrous, but the flowering branches, pedicels and bracts are covered with a viscid substance, another distinct feature of this species. In all other respects this species is typical of the genus *Bobartia*.

***Bobartia gladiata* Ker var. *major* Lewis var. nov.**

A type foliis cauleque latioribus, inflorescentia majora, differt.

Cape Peninsula, Patrys Vlei, Salter, S.A.M. 53198 (type)!

The variety differs from the typical in having a broader leaf and stem and larger inflorescence. It is not very common, found on plateaux on the Southern Peninsula near marshy places, flowering in December.

Leaves 30—40 cm. long, 5—10 mm. broad. Stem 40—60 cm. high, flattened, 5—10 mm. broad. Inflorescence compact, consisting of 6—10 cymes. Bract and bracteoles slightly shorter than in typical

B. gladiata. Flower minutely brown-spotted at centre, outer perianth-segment 2·8 cm. long, 1·3 cm. broad, inner 2·4 cm. long, 9 mm. broad.

***Bobartia indica* Linn. var. *minor* Lewis var. nov.**

A type planta et floribus minoribus differt.

Cape Peninsula, between Fish Hoek and Kommetje, Salter S.A.M. 53192 (type)! Lewis, S.A.M. 53710! Paarl Div., along Agter Paarl Road, Salter 6569 (S.A.M. and B.H.)!

This differs from the typical in being a smaller plant with smaller flowers.

Leaves terete, flexible, 40—60 cm. long, 1 mm. diam. Peduncle about 33—44 cm. high. Spathe acuminate, 12—18 cm. long. Inflorescence of 6—9 cymes. Perianth-segments—outer oblong, obtuse, 1·9 cm. long, 8 mm. broad, inner linear-oblong, obtuse, 1·8 cm. long, 6 mm. broad. Stamens—filaments 4 mm., anthers 4 mm.

***Klattia partita* Baker var. *flava* Lewis var. nov.**

Planta circa 1 m. alta; caules juvenales ab foliorum partes inferiores pubescentes demum glabrescentes. Inflorescentia circa 10-flora, terminalis, sessilis. Flores binati, bracteati spathis, bracteis, bracteolisque. Spatha anguste linearis, acuminata, 2·8 cm. longa, bractea scariosa, circa 2 cm. longa, bracteolae similes bractea coalitae, circa 1—1·6 cm. longae. Perianthii tubus 6 mm. longus; segmenta flava, 5—5·5 cm. longa, exteriores interioribus latiores, apices cochleariformibus. Stamina ad apicem perianthii tubi adnata. Stylus ad apicem perianthii segmentorum attingens, stigmatibus minute trilobato. Ovarium inferne perianthii tubo fusum.

Caledon Div., Hottentot Holland Mtns., Landdrostkop, Stokoe, S.A.M. 54461 (type)!

The variety differs from the typical *Klattia partita* in the colour of its flowers, which are pure primrose-yellow instead of purple-blue, and in being a taller plant, about 3 feet high instead of 1—2 feet. From dried material seen, the pubescence found on the young stems and leaf bases of the variety is present in the typical form as well, the older parts being glabrous.

Flowering season December.

Plant about 3 feet high. Leaves up to 21 cm. long, usually 10—11 cm. long; young stems and bases of leaves minutely pubescent, older parts glabrous. Inflorescence terminal, sessile, about 10-flowered, flowers arranged in pairs, each flower subtended by a narrow-linear acuminate spathe, 2·8 cm. long, and a bract and pair of fused bracteoles, all colourless, membranous, about 2 cm. and 1·6—1 cm. long. Perianth-tube 6 mm.

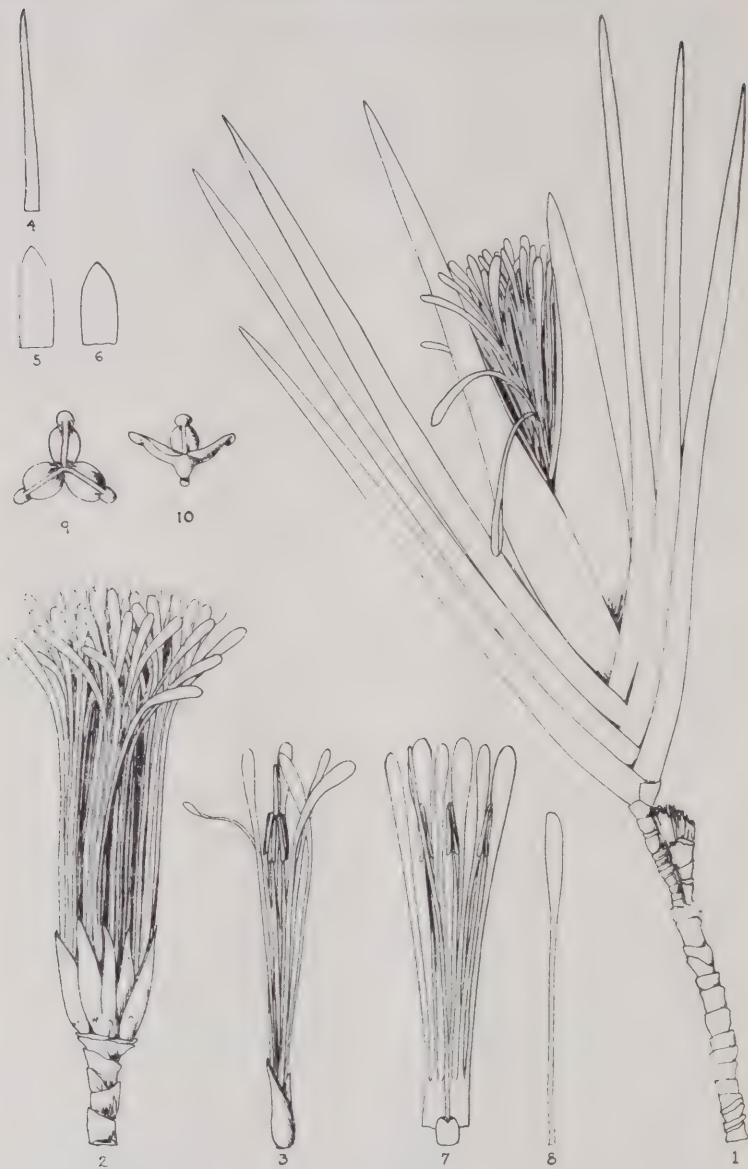


FIG. 5. *Klattia partita* var. *flava*. (All figures natural size.) 1. Flowering shoot. 2. Flower cluster, outer spathes removed. 3. Single flower. 4. Spathe (inner). 5. Bract. 6. Bracteoles. 7. Flower laid open. 8. Outer perianth segment. 9. Ripe capsule, open. 10. Ripe capsule, open, side view.

long; segments yellow, about 5—5.5 cm. long, 2 mm. or less broad, outer broader than inner, spoon-shaped at top. Stamens attached to top of perianth-tube, filaments 3.4—3.8 cm. long, anthers basifixed, about 1 cm. long. Style reaching top of perianth-segments; stigma minutely 3-lobed. Ovary fused with perianth-tube in lower half.

Moraea odorata Lewis sp. nov.

Cormus globosus vel cylindricus, tunicis e fibris duris, lignosis, exterioribus parallelis, interioribus conjunctis, superne breviter productis, compositis. Planta 35—50 cm. alta, caule ramoso, sub nodis viscoso. Folium basale 1, lineare, conduplicatum; foliorum caulinarum inferum lineare, basali simile, 7—10 cm. supra base caulis insertum, caulem breviter circumfusum, superiora 2 vel 3, vaginantia, brevia, acuta vel acuminata, nervis numerosis parum insignibus. Rami breves, recti, graciles, viscosi. Spatha acuta, folio caulino supremo similis. Segmenta perianthii basi unguiculata, exteriora (ungue incluso) 2—2.2 cm. longa, 7 mm. lata, obtusa, interiora breviter acuta vel obtusa, 2—2.5 cm. longa, 4—5 mm. lata. Stamina filamentis omnino conjunctis, antheris minute apiculatis. Stylus ramulis patentibus, cristis erectis, acuminatis. Lobi stigmatici 2, minimi, in apice styli. Capsula ovoidea, circa 6 mm. longa, 3—4 mm. diam.

Cape Peninsula, Camp Ground, Rondebosch, T. T. Barnard, B.H. 2034 (type)! Cape Flats, sand near Zeekoe Vlei, L. Bolus, B.H. 15205!

This species comes very near *M. viscaria* and *M. viscaria* var. *bituminosa*. From the former it differs in having a larger flower, the segments patent but not reflexed, obtuse or very shortly acute, and from the latter in having a smaller flower and shorter spathe. It also differs from both in the colour and sweet scent of the flowers. The flowers are white, the outer segments mauve outside and minutely spotted with yellow at the bend on the inner surface. They are sweetly scented and open at about 3 p.m., remaining open in the evening. This species, found on sandy flats, flowering during November and the first half of December, is not at all common.

Corm globose or somewhat elongated, about 2—3 cm. diam., tunics of hard, woody fibres, outer ones parallel, inner more or less fused together, extending upwards in a short neck. Plant 35—50 cm. high, stem usually much branched, a small viscid patch below each node. Leaf 1 basal, linear, conduplicate, up to 75 cm. long, about 5 mm. broad; cauline 1 linear, like basal, arising 7—10 cm. above base of stem, fused round stem at base only, 2 or 3 short, acute or acuminate, almost entirely sheathing, 6.5—3 cm. long, veins numerous, not very conspicuous. Branches short, erect, slender, viscid. Spathes shortly acute, 2.2 cm.

long, exactly like upper cauline leaf. Perianth-segments with a narrow claw at base about 5 mm. long; outer 2—2.2 cm. long (including claw), 7 mm. broad, obtuse; inner shortly acute or obtuse, 2—2.5 cm. long, 4—5 mm. broad. Stamens—filaments entirely fused, 6 mm. long, anther 4 mm., a minute apiculus at apex. Style 6 mm., branches spreading, about 5 mm. long, up to 4 mm. broad; crests erect, acuminate, 6 mm. long. Stigmatic lobes 2 minute flaps at top of each style branch. Capsule ovoid, about 6 mm. long, 3—4 mm. diam.

Moraea tripetala Ker. var. **Jacquiniana** Schlechter ex Lewis var. nov.

Iris tripetala Jacq. Ic. t. 221 (*ex parte*, figura media). *Moraea Jacquiniana* Schlechter (MS), Bolus and W. Dod, List of Fl. Plants and Ferns of Cape Peninsula, p. 328.

A typo caule brevior, folio angustior, floribus purpureis minoribus differt.

Cape Peninsula, Kloof Nek, T. T. Barnard, B.H. 22571! Hout Bay, Skoorsteen, Lewis, S.A.M. 54396! Vlaggeberg, Dod 457 (B.H.)! Constantiaberg, Dod 1919 (B.H.)! Muizenberg Mt., Bolus, 3393 (B.H.)! Pauls Berg, Lewis, S.A.M. 54301!

This variety differs from the typical *M. tripetala* in its smaller size, very narrow, almost terete leaf and smaller flower, which is purple in colour and has a more rounded lobe to the outer perianth-segments. It is a late-flowering plant and, while *M. tripetala* is found on the flats and lower mountain slopes during August and September, the variety is common on dry upper mountain slopes and plateaux, flowering from October to January.

Schlechter's name, *M. Jacquiniana*, was not published, although Bolus and W. Dod have quoted it as if published in their list of Peninsula Plants.

Plant very slender, about 30 cm. high, stem simple. Leaf conduplicate, very slender, terete in appearance, up to 60 cm. long, about 2 mm. broad. Perianth-segments—outer with basal claw, 1—1.2 cm. long, upper part nearly ovate, obtuse or shortly acute, 1.2—1.4 cm. long, 1—1.2 cm. broad; inner a minute cusp, 6 mm. long or less. Stamens—filaments fused for 1 mm., 3 mm. free; anthers 6 mm. Style 1 mm., branches 1 cm. long, up to 2 mm. broad; crests narrow-linear, acute, incurved, 5—8 mm. long.

V. MISCELLANEOUS NOTES ON IRIDACEAE.

Gladiolus subaphyllus N. E. Brown, Kew Bull. 1909, 53.

Geissorhiza gracilis Baker, Handbk. Irid. 155 (1892); Fl. Cap. VI, 70

(1896). *Ixia brevifolia* Baker, Handbk. Irid. 165 (1892) : Fl. Cap. VI. 84.

Tyson no. 1872 from the Zuurberg Range, Griqualand East, is the type of *Geissorhiza gracilis* Baker and *Ixia brevifolia* Baker. On examining these two types I found them to be identical and that the plants do not belong to the genus *Geissorhiza* nor to *Ixia* but to the genus *Gladiolus*, being identical with *Gladiolus subaphyllus* N. E. Brown. As the names *brevifolius* and *gracilis* have already been used in the genus *Gladiolus* the later name, *Gladiolus subaphyllus*, should be retained for this species.

Watsonia Cooperi (Baker) L. Bolus, Journ. Bot. (1929) LXVII, 135.

Tritonia Cooperi Baker, Handbk. Irid. 192 (1892) ; Fl. Cap. VI, 122.
Tritonia quinquenervata Foster in Contrb. Gray. Herb. CXIV, 46 (1936).

There is no doubt that a leaf of *Anapalina nervosa* has been mounted by mistake with *Watsonia Cooperi* and it was to this that Baker referred when he described the five strong nerves on the leaf.

Tanaosolen nervosus (Baker) Lewis comb. nov.

Tanaosolen nudus N. E. Br. in Trans. Royal Soc. S. Afr. Vol. XX, 262 (1932). *Ixia nervosa* Baker Handbk. Irid. 166 (1892) ; Fl. Cap. VI, 85.
Morphixia nervosa Baker in Journ. Bot. (1876) 237 ; Journ. Linn. Soc. XVI, 98 (1877).

The types of *Tanaosolen nudus* and *Ixia nervosa* were compared at Kew by myself in 1934 and found to be identical. The earlier specific name should therefore be retained in this new genus.

Babiana striata (Jacq.) Lewis comb. nov.

Gladiolus striatus Jacq. Collect. V. 28 ; Ic. t. 260 (1796) ; Baker, Handbk. Irid. 209 (1892) ; Fl. Cap. VI, 148 (1896). *Tritonia striata* Ker in Konig and Sims Ann. I. 228 (1805) ; Gen. Irid. 117 (1827). *Antholyza striata* Klatt. Erganz. 12 (1882). *Gladiolus formosus* Pers. Sym. 1, 44. 1802 *Hebea formosa* Eckl. Top. Verz. 42 (1827).

As can be seen from the above synonymy, there has been a certain amount of confusion about the genus to which this plant belongs. I have examined fresh material from the Clanwilliam Div. which matches Jacquin's figure very well indeed and am in no doubt that it belongs to the genus *Babiana*, its affinity being with *B. spiralis* (see Fl. Pl. S. Afr., Vol. XVIII, no. 69, t. 686). The corm is typical of this genus, having numerous soft but wiry reddish-brown, fibrous tunics, which extend upwards to form a neck.

The plant figured by Jacquin and subsequent descriptions are without locality. I therefore quote the following which belong to this species, flowering during August and September.

Clanwilliam Div., Oliphants River Valley, Archdeacon Lavis, B.H. 18445! between Greys Pass and Clanwilliam, Bolus, B.H. 22570! near Van Rhynsdorp, Marloth 7468 (B.H.)!

Gladiolus venustus Lewis nom. nov.

Gladiolus formosus Klatt in *Linnaea* XXXII, 692 (1863); Baker, *Handbk. Irid.* 225 (1892); *Fl. Cap.* VI, 161 (1896), not of Persoon.

The name *G. formosus* having already been used, although incorrectly, in this genus, I propose changing the name of the plant hitherto known as *G. formosus* to the above name.

Hesperantha insipida Lewis nom. nov.

Geissorhiza pauciflora Baker in *Bull. Herb. Boiss.* 2nd Ser. IV. 1004 (1904).

Examination of the co-type in the Bolus Herbarium has shown this to be a *Hesperantha* and, as the name *pauciflora* has been used in this genus, I propose the above name for this rather insignificant species.

Tritonia Cooperi (Baker) Klatt, *Erganz.* 24 (1882).

Morphixia Cooperi Baker, *Journ. Bot.* (1876) 237; *Journ. Linn. Soc.* XVI, 98 (1877). *Ixia Cooperi* Baker, *Handbk. Irid.* 166 (1892); *Fl. Cap.* VI, 84 (1896).

Examination of this plant has proved that it is not an *Ixia*, and I therefore restore it to its correct genus, *Tritonia*.

Lapeyrousia setifolia (Linn. f.) N.E. Br. *Journ. Linn. Soc.* XLVIII, 30 (1928).

The synonymy is as follows:—*Gladiolus setifolius* Linn. f. *Suppl.* 96 (1781); Thunb. *Diss. Glad.* 18 (1784); *Lapeyrousia divaricata* Baker, *Journ. Bot.* (1876) 337; *Fl. Cap.* VI, 91 (1896). *Chasmatocallis Macowani* Foster, *Contrb. from Gray Herb.* CXXVII, 40 (1936).

Mr. R. C. Foster described a new genus, *Chasmatocallis*, based on MacOwan 1975 (type in Gray Herbarium). There are co-types in the South African Museum Herbarium and Bolus Herbarium and, after examining them, I find that I cannot agree with Mr. Foster in regarding this as a new genus. I consider that it belongs to the genus *Lapeyrousia*, being closely related to *L. serrulata*, *L. aculeata*, *L. angustifolia* and one or two other species. Mr. Foster has noted that in "habit of growth it seems to resemble some species of *Lapeyrousia*, such as *L. Fabricii* (Delaroché) Ker and its relatives, a resemblance strengthened by the deeply bifid stigmas," but from this he goes on to say that "the spathes resemble those of *Exohebea*, probably the closest relative of the new

genus, but the outer spathe is herbaceous, not brown and membranous." Any resemblance there might be to the genus *Exohebea* is purely superficial and in the flower only, the two genera being entirely different, the differences being in the corm, leaves, stem, bract and style branches.

To return to the first statement that it resembles some species of *Lapeyrousia*, I should like to elaborate this to show why I consider that it belongs to this genus. As I have stated earlier in this paper, the corm is of very great importance in determining the genera in the Iridaceae. There is no corm present on the type specimen (according to description), but corms are present on specimens exactly matching the co-type in the S.A. Museum Herb., also the remains of a corm on one of the co-type specimens, and it is typical of the genus *Lapeyrousia*. It is conical in shape, flat at the base, and the corm tunics are hard, compact and almost woody. Another important character is the linear falcate leaf with its 3—5 more or less prominent veins, typical of the section of *Lapeyrousia*, to which this species belongs. The herbaceous bract and branched stem are also typical. The flower is more irregular than is usual in *Lapeyrousia* but it has the bifid style branches characteristic of the genus. Calli on the 3 lower perianth-segments are found in this and in two or three other species of *Lapeyrousia*, e.g. *L. serrulata* Schltr.

Moraea ceresiana Lewis nom. nov.

M. violacea L. Bolus in S.A. Gard. Vol. XVIII, 116 (1928).

I propose the above name for the species, allied to *M. tenuis* Ker, to which Dr. L. Bolus has given the specific name *violacea*, a name already used by Baker (*M. violacea* Baker in Rev. Cult. Colon. VIII, 862). The type specimens come from the Ceres Div., and, as far as is known, it has not been collected elsewhere.

Romulea Macowani Baker, Journ. Bot. 1876, 236.

Syringodea luteo-nigra Baker in Kew Bull. 1897, 281.

The types of *Romalea Macowani* and *Syringodea luteo-nigra* have been examined and found to be the same.

VI. THE IDENTITY OF *Tulipa Breyneana* L.

Since the last quarter of the 18th century there has been a general tendency to regard "*Tulipa Breyneana* L." as being the plant commonly known as *Bacometra columellaris* Salisb., though during the latter part of last century Linné's name was not used. Salisbury himself (Trans. Hort. Soc. 1, 330, 1812; Gen. Pl. 54, 1864), when creating the genus *Bacometra*, for one species quotes the Linnean name as belonging to his

plant. This identification is based upon the description in the second edition of the *Species Plantarum* (L. Sp. Pl. ed. 2, 438, 1763), about which there is no doubt. Indeed, many authors quote only the second edition in reference to the species: examples are Thunberg (Fl. Cap. ed. Schultz 331, 1823), Schlechtendal (under *Kolbea*) (Linnaea 1, 82, 1826), and Baker (Journ. Linn. Soc. Bot. 17, 446, 1879; Fl. Cap. 6, 523, 1897).

Tulipa Breyniana was, however, first described in 1753 (L. Sp. Pl. 306, 1753), when the description was as follows:—

“T. caule polyphylo, foliis linearibus.

“Sisyrinchium, ex phoeniceo suavrubente, aethiopicum. Breyn. Cent.

“t. 36. Rudb. Elys. 2, p. 13, f. 11.

“Hab. in Aethiopia. 4.”

This description is too short for identification without reference to the cited figures. The plate of Breynius (Pl. Exot. Cent. 21, t. 36, 1677) represents a rather tall-growing plant with a small corm. The leaves are elongated and not regular. The flowers are solitary and tulip-like on stalks which have the lower parts wrapped round by sheathing bracts. In the shoot with a complete flower the bracts are represented as being loose, but in three others they wrap closely round. In the flower itself no stamens are represented, nor is the ovary shown; the tip of the style appears between the perianth-segments.

The plate represents a plant quite unlike *Baeometra*, but, in spite of the lack of floral details, is quite a good likeness of *Homeria collina*. The accompanying description confirms this. Breynius was evidently dealing with the red form of the species. From the fact that Linné placed the plant in *Hexandria Monogynia* and in the genus *Tulipa* it is evident that he had not a specimen before him, but was basing his description on the external features depicted in the plate.

The plant figured by Breynius was a recognised species previous to 1753 and evidently not a rare one: it is included by a number of writers among whom may be mentioned Ray (Hist. Pl. 1168, 1686), Kolbe (Besch. v. de Kaap 1, 302, 1727) and Hermann (Cat. Pl. Afr. 21, 1737).

In the second edition Linné made some changes and additions to the description, all of which mark divergences from the characters of the plant figured by Breynius. It would seem that before 1763 he obtained a specimen of *Baeometra* and described it without realising that it was not the plant of his original description. The citations are not changed, but in the diagnosis he introduces the word “*multiflora*” and adds the following paragraph at the end:—(L. Sp. Pl. ed. 2, 438, 1763.)

“Folia caulina 6 s. 7, lineari-lanceolata: suprema sensim breviora.

“Flores ad apicem 3 s. 4, minores quam plantae Breynii cultae.

“Petala basi angustata. Stylus nullus.”

While these additions clearly refer to *Baeometra*, they are at variance with the plate originally cited, and show that there are two plants involved. The specimens in the Linn. Herb. are not early ones and cannot be taken as the type of the species. Breynius' plate upon which the first description was based constitutes the type and the specific name must be retained for this.

Kunth (Enum. 4, 162, 1843) appears to have been the first to realise that there are two plants associated here. Unfortunately, while realising that the plant of 1753 is not *Baeometra*, he quotes both the description and citations of 1763 as applying to that plant, and thus tended to confirm the view that the Linnean species and Salisbury's are the same.

According to the International Rules the plant of 1753, typified by Breynius' plate, must bear the original name, and this is not valid for that of 1763. This involves a change in the commonly accepted nomenclature. The species becomes:—

Homeria Breyniana (L.) Lewis comb. nov.

Tulipa Breyniana L. Sp. Pl. 306, 1753. *non* ed. 2, 1763.

Homeria collina Vent. Dec. Gen. Nov. 5, 1808.

Moraea collina Thunb. Diss. de Moraea 5, 1787. Diss. Acad. 2, 281, 1800.

Even though the Linnean epithet is not valid for Salisbury's species a change is needed as his name is antedated. It becomes:—

Baeometra uniflora (Jacq.) Lewis comb. nov.

Melanthium uniflorum Jacq. Coll. 4, 100, 1790; Ic. 2, 21, t. 450, 1793.

Baeometra columellaris Salisb. Trans. Hort. Soc. 1, 330, 1812.

B. Breyniana Dur. & Schinz Consp. Fl. Afr. 5, 414, 1895.

Tulipa Breyniana L. Sp. Pl. ed. 2, 438, 1763 *non* ed. 1, 1753.

Kolbea Breyniana Schlecht. Linnaea 1, 82, 1826.

Melanthium aethiopicum (Thunb. ex) Desr. in Lam. Encyc. 4, 29, 1797.

ACKNOWLEDGMENTS.

I should like to express my thanks to Professor R. S. Adamson, who kindly read through the manuscript of this paper, also to Dr. L. Bolus and Dr. E. P. Phillips for the loan of material from the Bolus Herbarium and the National Herbarium. I should like also to thank Professor Adamson and Mr. S. Garside for information regarding *Tulipa breyniana* and Miss M. Walgate for preparing my drawings for publication.